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ENTERED AT THE POSTOFFICE, MEDINA, OHIO, AS SECOND CLASS MATTER.

VOL. XIX. NO. 3.

FEB. 1, 1891.

PEACE ON EARTH GOODWILL TOWARD MEN

SEEKINGS IN

BEE CULTURE

DEVOTED TO

SCIENCE

& HOME INTERESTS.

MEDINA, OHIO

BY
A. J. ROOT



TERMS, ONE DOLLAR PER YEAR.

FRANK H. DUNNELL, X5

SM. Curr. 1890

ADVERTISEMENTS.

We require that every advertiser satisfy us of responsibility and intention to do all that he agrees, and that his goods are really worth the price asked for them. Patent-medicine advertisements, and others of a like nature, can not be inserted at any price.

Rates for Advertisements.

All advertisements will be inserted at the rate of 20 cents per line, Nonpareil space, each insertion; 12 lines of Nonpareil space make 1 inch. Discounts will be made as follows:

On 10 lines and upward, 3 insertions, 5 per cent; 6 insertions, 10 per cent; 9 insertions, 15 per cent; 12 insertions or more, 20 per cent; 24 insertions or more, 25 per cent.

On 48 lines (1/4 column) and upward, 1 insertion, 5 per cent; 3 insertions, 10 per cent; 6 insertions, 15 per cent; 9 insertions, 20 per cent; 12 insertions, or more, 25 per cent; 24 insertions or more, 33 1/3 per cent.

On 96 lines (whole column) and upward, 1 insertion, 10 per cent; 3 insertions, 15 per cent; 6 insertions, 20 per cent; 9 insertions, 25 percent; 12 insertions, or more, 33 1/3 per cent; 24 insertions or more, 40 per cent.

On 192 lines (whole page), 1 insertion, 15 per cent; 3 insertions, 20 per cent; 6 insertions, 25 per cent; 9 insertions, 30 per cent; 12 insertions or more, 40 per cent; 24 insertions or more, 50 per cent.

No additional discount for electrotype advertisements.

A. I. ROOT.

CLUBBING LIST.

We will send GLEANINGS—
 With the American Bee-Journal, W'y (\$1.00) \$1.75
 With the Canadian Bee-Journal, W'y (75) 1.65
 With the Bee Hive, (30) 1.20
 With the Bee-Keepers' Review, (1.00) 1.75
 With the British Bee-Journal, (1.50) 2.00
 With American Apiculturalist, (75) 1.70
 With American Bee-Keeper, (50) 1.40
 With all of the above journals, 5.85

With American Agriculturist, (\$1.50) 2.25
 With American Garden, (2.00) 2.60
 With Prairie Farmer, (1.50) 2.35
 With Rural New-Yorker, (2.00) 2.90
 With Farm Journal, (50) 1.20
 With Scientific American, (3.00) 3.75
 With Ohio Farmer, (1.00) 1.90
 With Popular Gardening, (1.00) 1.85
 With U. S. Official Postal Guide, (1.50) 2.25
 With Sunday-School Times, weekly, (1.50) 1.75
 With Drainage and Farm Journal, (1.00) 1.75
 With Illustrated Home Journal, (50) 1.35
 With Orchard and Garden, (50) 1.40

[Above Rates include all Postage in U. S. and Canada.]

FOR SALE.

One 4-horse-power rotary engine. Will sell cheap to make room for larger power.

S. H. MUSSELMAN,
 Blue Ball, Pa.

In responding to this advertisement mention GLEANINGS.

Cash for Beeswax!

Will pay 25c per lb. cash, or 28c in trade for any quantity of good, fair, average beeswax, delivered at our R. R. station. The same will be sold to those who wish to purchase, at 31c per lb., or 35c for best selected wax.

Unless you put your name on the box, and notify us by mail of amount sent, I can not hold myself responsible for mistakes. It will not pay as a general thing to send wax by express.

A. I. ROOT, Medina, Ohio.

Names of responsible parties will be inserted in any of the following departments, at a uniform price of 20 cents each insertion, or \$2.00 per annum, when given once a month, or \$4.00 per year if given in every issue.

Untested Queens

FOR \$1.00 FROM JULY 1ST TILL NOV. 1ST.

Names inserted in this department the first time without charge. After, 20c each insertion, or \$2.00 per year.

Those whose names appear below agree to furnish Italian queens for \$1.00 each, under the following conditions: No guarantee is to be assumed of purity, or anything of the kind, only that the queen be reared from a choice, pure mother, and had commenced to lay when they were shipped. They also agree to return the money at any time when customers become impatient of such delay as may be unavoidable.

Bear in mind, that he who sends the best queens, put up most neatly and most securely, will probably receive the most orders. Special rates for warranted and tested queens, furnished on application to any of the parties. Names with * use an imported queen-mother. If the queen arrives dead, notify us and we will send you another. Probably none will be sent for \$1.00 before July 1st, or after Nov. 1st wanted sooner, or later, see rates in price list.

*A. I. Root, Medina, Ohio.

*H. H. Brown, Light Street, Col. Co., Pa. 7tf90

*Paul L. Viallon, Bayou Goula, La. 7tf90

*S. F. Newman, Norwalk, Huron Co., O. 7tf90

C. G. Vaughn, Columbia, Tenn. 9tf90

J. M. Jenkins, Wetumpka, Ala. 9tf90

*Oliver Hoover & Co., Snydertown, Northumberland Co., Pa. 17tf90

Hive Manufacturers.

Who agree to make such hives, and at the prices named, as those described on our circular.

A. I. Root, Medina, Ohio.

P. L. Viallon, Bayou Goula, Iberville Par., La 7tf90

C. W. Costellow, Waterboro, York Co., Me. 7tf90

R. B. Leahy, Higginsville, Laf. Co., Mo. 9tf90

J. M. Jenkins, Wetumpka, Ala. 9tf90

W. T. Falconer Mfg. Co., Jamestown, N. Y. 7tf90

Wire Cloth.

For door and window screens, tacking over hives and nuclei for shipping, making bee and queen cages, and a variety of purposes. We have the following list of green and black wire cloth which is not exactly first class, but is practically as good for the purposes mentioned, and at prices MUCH BELOW the ordinary price. You can no doubt select from this list a piece to suit your needs. Price in full pieces, 1 1/2 cts. per square foot. When we have to cut it, 2 cts. In case the piece you order may have been taken by some one else before your order comes, please say whether we shall send the nearest in size, or cut one the size ordered at 2 cts. per ft., or give a second or third choice.

No. of Rolls.	Width, In.	Length, Ft.	Per Sq. Foot.	Price of a Full Roll.
10 green	8	100	67	\$1.17 65, 65, 64, 63, 63, 62, 64, 40, 33
25 green	12	100	100	1.75 44, green; price 77 tf90
2 green	10	133	2	33
1 black	22	71	128	2.24 110 sq. ft., black; price \$1.92
5 green	24	109	200	3.50 140, 40, 30, 8, green; 200 black.
54 green	26	100	217	3.50 This is below reg. pr. of 1 1/2 cts.
14 green	28	100	200	4.08 92, 22, green
7 green	30	100	207	4.77 153, green; price \$2.33
10 green	34	100	300	6.25 300, black; price \$5.25
6 black	38	100	317	5.54 259, black; price \$4.70
5 green	38	100	317	5.54 258, black; price \$4.50
3 black	46	100	333	5.83 317, black; price \$5.54
8 black	42	100	354	6.12 350, green; price \$6.12
1 green	44	100	367	6.42

A. I. ROOT, Medina, Ohio.

IMPROVED EXCELSIOR INCUBATOR



Simple, Perfect and Self-Regulating. Hundreds in successful operation. Guaranteed to hatch a larger percentage of fertile eggs at less cost than any other hatcher. Send 6c. for Illus. Catalogue, Circulars Free. GEO. H. STAHL, Quincy, Ill.

✉ In responding to this advertisement mention GLEANINGS.

IMPORTED QUEENS.

In May and June, each \$2.00
In July and August, each 1.80

In September and October, each 1.60

Money must be sent in advance. Safe arrival guaranteed. Queens that die en route, if returned in the letter, will be replaced by mail, postpaid. No order for less than 8 queens by express will be accepted.

CHAS. BIANCONCINI,
Bologna, Italy.

✉ In responding to this advertisement mention GLEANINGS.

1891. 12th Year.

HEADQUARTERS IN THE SOUTH

For the manufacture and sale of
BEE-HIVES AND BEE-KEEPERS' SUPPLIES,

Early Nuclei, and Italian Queens.

Send for Price List.

P. L. VIALLON,

Bayou Goula, La.

✉ In responding to this advertisement mention GLEANINGS.

PATENT WIRED COMB FOUNDATION HAS NO SAG IN BROOD-FRAMES.

THIN FLAT - BOTTOM FOUNDATION

Has No Fish-bone in Surplus Honey.

Being the cleanest is usually worked the quickest of any Foundation made.

J. VAN DEUSEN & SONS,

Sole Manufacturers, 5tfdb

Sprout Brook, Montgomery Co., N. Y.

✉ In responding to this advertisement mention GLEANINGS.

Bee-Keepers' Supplies.

WHY + SEND + LONG + DISTANCES ?

SEND YOUR ADDRESS (DON'T FORGET
THE COUNTY) FOR MY NEW PRICE
LIST FOR 1891.

C. P. BISH, Grove City, Mercer Co., Pennsyl'a.

ESTABLISHED IN 1884. 7tfdb

Please mention this paper.

HIVES AND FRAMES.

8-frame hive, with two supers, 90c; 10, \$8.00. Thick top brood-frames, with top-bar split to receive fdn. guide, per 100, 90c; other styles, \$1.00 per 100. No. 1 sections, \$3.00 per M. Parker fdn-fasteners, 20c, this month only. Circular free. 19-17d

SPECIAL RATES TO DEALERS.

Write us. W. D. SOPER & CO.,
118-120 Washington St. E., Jackson, Mich.

Please mention this paper.

1891. EARLY ITALIAN QUEENS from bees bred for business. Try my strain of 7 yrs. breeding. The extra honey stored will more than pay her cost. Each \$1.00: six, \$4.50. Ready in May. If you prefer, order now and pay when queens arrive.

W. H. LAWS,

✉ In responding to this advertisement mention GLEANINGS.

STORE AND APIARY FOR SALE.

Store finely situated for doing good business. First-class apiary of 150 colonies of choice Italians. Every thing necessary for getting the best results in extracted honey—bees in self-spacing hanging frame hives. Also two Bee-Wagons, Honey-Extractors, Wax-Extractors, Honey-Kegs, one Given Foundation-Press with two sets of dies, one large Store-House near bee-yard. Two good boats, with interest in boat-house on lake. For particulars apply to

C. G. FERRIS, Miller's Mills, N. Y.

2tfdb Please mention this paper.

EGGS! Brown Leghorn, White Leghorn, \$1.25. Black Minorca, Plymouth Rock, Pekin Duck, \$1.50. Light Brahma, Langshan, Game, \$2 per 12 eggs. Strictly pure-bred. Ship safely anywhere. Illustrated circular free. **GEER BROS.,**

St. Marys, Mo.

✉ In responding to this advertisement mention GLEANINGS.

1891. NEW BEE-HIVE FACTORY. 1891.

Root's Dovetailed Hive a specialty. Price List free. Save your freight, and order early of

1tfdb **GEO. W. COOK,**

Spring Hill, Johnson Co., Kan.

✉ In responding to this advertisement mention GLEANINGS.

The **Bee World** is published monthly at 50c per year. It is devoted to THE BEE tions, and discovering to collecting the lat- ies throughout the est NEWS, invent- WORLD, bee-keeping world. If you want to keep posted, you cannot afford to do without it. **Subscribe now.** Sample copies free. 27d Address W. S. VANDRUFF, Waynesburg, Pa.

✉ In responding to this advertisement mention GLEANINGS.

Western Bee-Keepers' Supply House

Root's Goods can be had at Des Moines Iowa, at Root's Prices. The largest supply business in the West. Established 1855. Dovetailed Hives, Sections, Foundation, Extractors, Smokers, Veils, Crates, Feeders, Clover Seeds, etc. Imported Italian Queens, Queens and Bees. Sample copy of our Bee Journal, "The Western Bee-keeper," and Latest Catalogue mailed Free to Bee-keepers. JOSEPH NYSEWANDER, DES MOINES, IOWA.

✉ In responding to this advertisement mention GLEANINGS.

Barnes' Foot-Power Machinery.

Read what J. I. PARENT, of CHARLTON, N. Y., says—"We cut with one of your Combined Machines last winter 50 chaff hives with 7-inch cap, 100 honey-racks, 500 broad frames, 2,000 honey-boxes, and a great deal of other work. This winter we have double the amount of bee-hives, etc., to make, and we expect to do it all with this Saw. It will do all you say it will." Catalogue and Price List Free. Address W. F. & JOHN BARNES, 545 Ruby St., Rockford, Ill. When more convenient, orders for Barnes' Foot-Power Machinery may be sent to me. A. I. Root. 23tfdb

VANDERVORT COMB FOUNDATION MILLS.

Send for samples and reduced price list.

1tfdb **JNO. VANDERVORT** Laceyville, Pa.

✉ In responding to this advertisement mention GLEANINGS.

Contents of this Number.

Alfalfa-roots	101	Hives, Double-walled	99
Ants, Black	101	Hoffman Frame	99
Apiaries, Manum's	86	Honey like wet Sugar	100
Bees Roaring	85	Idea, The New	101
Boards or Quilts	98	Indiana Paint Co.	107
Bricks on Hives	89	Japanese Buckwheat	100
Carp	90	Kegs vs. Cans	96
Cellars, Temperature	108	Manum at Barber's	85
Comb, Dark	98	Moth, Timid	88
Comb Honey, Propolis	98	New York Paint	100
Dove'd Hive in Oregon	101	Oil-cans for honey	101
Ernest at Dr. Miller's	91	Onion Culture	99
Foundation, Full Sheets	94	Outer Case for Wintering	97
Frame, Against Hoffman	96	Outside Show in Goods	93
Frame, Hoffman	100	Queens from Cell-upts	84
Frame to Adopt	100	Rambler at Dr. Merchant's	94
Frames Lengthwise	99	Record on Hives	89
Garden-seeds, Reducing list	106	Rent for Apiai	101
Garden, Making it Pay	109	Road-making	98
Gleanings and Trusts	92	Sections Sold by the Piece	97
Gloves in Apiaiary	88	Spacing, Close	100
Hair Packing	99	Spanish Needle	100
Heat in Cellar	(Q. B.) 102	Spring Dwindling	99
Hive, Dovetailed	87	Tunis, Letter from	95

HONEY COLUMN.

CITY MARKETS.

MILWAUKEE.—*Honey.*—The demand for honey, both comb and extracted, has been ruling dull, and supply has accumulated somewhat. But during the past week a better trade has been enjoyed. Can quote market fairly easy. For 1-lb. sections, best, 18@19c; good, 16@18c; common, 10@12c. Extracted, in barrels, kegs, and cans, white, 8½@9½; amber, 6½@8. *Beeswax*, 25@28. A. V. BISHOP,

Jan. 17. 142 W. Water St., Milwaukee, Wis.

CINCINNATI.—*Honey.*—There is a fair demand for comb honey at 16@18c a lb. in the jobbing way for choice white. Demand is good for extracted honey at 6@8c a lb. on arrival. There is a good supply of all but Southern honey, which is scarce. *Beeswax*.—Demand is good for beeswax at 24@26c a lb. for good to choice yellow on arrival.

Jan. 16. CHAS. F. MUTH & SON, Cincinnati, O.

NEW YORK.—*Honey.*—Market quiet and unchanged. We quote extracted light Fla. at from 8@8½ cts. per lb., and California from 7@7½ cts. per lb. *Beeswax*.—Demand is good for beeswax at 24@26c a lb. from 27@29 cts. per lb.

F. G. STROHMEYER & CO.,

Jan. 20. New York City.

ALBANY.—*Honey.*—We have received up to date 2150 cases of comb and 234 packages of extracted honey. As we expected, there is an increased demand for dark extracted honey, and we are nearly out of stock. Comb honey is moving off slowly with no change in prices. White, 16@18c; mixed, 14@15c; buckwheat, 11@13c. Extracted light, 9@10; dark, 7@8. CHAS. McCULLOCH & CO.,

Jan. 21. 339 Broadway, Albany, N. Y.

ST. LOUIS.—*Honey.*—We quote to-day's honey-market: Choice white-clover comb, 1-lb. sections, 18c; good, 17c; fair, 15@16c; broken comb, 10@12c. Extracted, white clover, in cans, 9@10c; dark, 7@8c; Southern, in barrels, 5½@6½. *Beeswax*.—Selected, 25½@26c; prime, 25@25½c; dark and burned, less.

Jan. 10. W. B. WESTCOTT & CO., St. Louis, Mo.

SAN FRANCISCO.—*Honey.*—Extracted honey firm 5½@6½c. Comb honey scarce; 1-lb., 12@14c; 1-lb., 14@16. *Beeswax* in demand at 24@24½c.

SCHACHT, LEMCKE & STEINER,

Jan. 12. San Francisco, Cal.

DETROIT.—*Honey.*—Comb honey is selling slowly at 15@16c; white clover and basswood scarce. Extracted, 7@8c. *Beeswax*, 27@28c.

Bell Branch, Mich., Jan. 19. M. H. HUNT.

ALBANY.—*Honey.*—The stock of honey here never was so light as now so early in the season, and now is the time to sell. Light comb, 15@18c; dark, 12@14c. Light extracted, 9@10c; dark, 7@8c.

Jan. 15. H. R. WRIGHT, Albany, N. Y.

ST. LOUIS.—*Honey.*—Market unchanged. Demand quiet for comb. Extracted in good inquiry at 6@7c in barrels. *Beeswax*, prime, 25c.

Jan. 19. D. G. TUTT GRO. CO.,

St. Louis, Mo.

COLUMBUS.—*Honey.*—White clover in demand at 19@20c. Extracted honey very dull.

Jan. 19. EARLE CLICKENGER, Columbus, O.

FOR SALE.—4 60-lb. cans white-clover and basswood extracted honey, on cars at Morrison, Mo., at \$6 per can.

34-5-6-d MILLER BROTHERS, Bluffton, Montgomery Co., Mo.

FOR SALE.—50 cans of light extracted honey, at 8½ cts. per lb. Entire lot at \$5.00 per can.

S. A. SHUCK, Liverpool, Ill.

FOR SALE.—1200 lbs. extracted white-clover honey in barrels or 60-lb. cans, as desired. 12-tfdb.

E. J. BAXTER, Nauvoo, Ill.

FOR SALE.—Choice honey in sections, cans, and C. pails. Send for price list to OLIVER FOSTER, 12-tfdb.

Mt. Vernon, Ia.

CONVENTION NOTICES.

The Northeastern Michigan Bee-keepers' Association will hold its annual meeting on Wednesday, Feb. 4, at the Commercial House, Port Huron.

W. Z. HUTCHINSON, Sec'y.

The 8th semi-annual meeting of the Susquehanna County Bee-keepers' Association will be held at Montrose, Pa., Tl. 12-12, May 7, 1891.

H. M. SEELEY, Sec'y.

The Eastern Iowa Bee keepers' Association will meet Feb. 11 and 12, 1891, in Maquoketa, Iowa, at the Dobson Town-clock building, to come punctually at 10 A.M. There will be a large turnout of the producers of bee-keepers of the State. There will be a question box, free to all, in which any question that you wish discussed can be presented and answered. Let all be on hand, and bring in your report for 1890, spring count, or from May 1. The people of Maquoketa kindly furnish us a free hall.

FRANK COVERDALE, Sec.

The following is the program of the proceedings of the annual convention of the Ohio State Bee-keepers' Association, to be held at the Merchants' Hotel, Toledo, Feb. 10, 11.

FIRST DAY, TUESDAY, FEB. 10.

Convention called to order by the President. Reading minutes of previous meeting. Receiving members, and payment of annual dues—50 cents.

How can this convention be made interesting and profitable—Volunteers. Recess.

The relation of honey-eating to longevity.—E. E. Hasty.

Appointment of committees.

AFTERNOON.

Address of the President, Dr. A. B. Mason.

Bee-laws.—Dr. C. C. Miller, Marengo, Ill. Recess.

Getting used to a thing.—E. R. Root, Medina, O.

Question box.

EVENING.

The principal cause of the failure of the honey-crop in my neighborhood.—C. F. Muth, Cincinnati. Recess.

How can honey-producers best reach the trade?—Or Do we need a Union trade-mark?—Miss Dema Bennett, Bedford, O. Question box.

WEDNESDAY MORNING.

Queen-rearing.—Dr. G. L. Tinker, New Philadelphia, O. Spacing of frames, and its relation to brood-rearing and swarming.—J. B. Hains, Bedford. Recess.

Reports of committees. Deciding place of next meeting. Election of Officers.

Freight classification for bee-keepers.—J. T. Calvert, Medina.

Advantages of foundation.—W. Z. Hutchinson, Flint, Mich.

AFTERNOON.

Moving bees to catch the honey-flow.—H. R. Boardman, East Townsend, O.

Perforated zinc in extracting.—Volunteers.

Unfinished business. Recess. Question-box.

Bedford, O. MISS DEMA BENNETT, Sec'y.

The Southwestern Wisconsin Bee-keepers' Association will hold its next convention in the Court-house, at Lancaster, Grant Co., Wis., March 25 and 26, 1891. All who are interested in apiculture, and conventional work on the same, are cordially invited to attend. The following are the topics for essays.

1. Spring dwindling and cure—Edwin Pike, Boscobel.

2. Enemies, and how to avoid—N. E. France, Platteville.

3. Foul brood and cure—N. E. France.

4. What are the most destructive birds that kill bees?—Edwin Pike, Boscobel.

5. Queen introducing and raising—A. E. Coolie, Mt. Hope.

6. What is the best way to ventilate a cellar for bees to winter in?—H. Evans, Wauzeka.

7. How shall our membership manage to sell our honey crop to the best advantage?—Edwin Pike.

8. Does it injure a queen to be clipped?—M. M. Rice, Marion.

9. Which will produce more honey—a colony allowed to swarm, counting in the work of the swarm, or one kept from swarming?—Delos Ricks, Boscobel.

10. Which is the most profitable way for increase—by artificial swarming or by natural swarming?—M. M. Rice.

11. Jobbing, cause and cure—H. Gilmore, George town.

12. Is it profitable for a farmer to keep bees?—E. S. Morse, Fenimore.

13. Location of apiary and stands, tools, etc.—B. E. Rice.

14. Other occupations for bee-keepers, that pay well to combine with apiculture—Mr. Pridgeaux, Bloomington.

B. E. RICE, Sec'y.

PRICE LISTS RECEIVED.

Since our last issue we have received price lists of bees, hives, and apiarian supplies in general, from the following parties:

J. B. LaMonte, Winter Park, Fla.
F. J. Treggo, Swedenia, Ill.
Gregory Brothers, Ottumwa, Ia.
M. Richardson & Son, Port Colborne, Ont.
W. D. Soper & Co., Jackson, Mich.
Geo. E. Hilton, Fremont, Newaygo Co., Mich.
The following are from our press:
Colwick & Colwick, Norse, Texas.
Walter S. Poulder, Indianapolis, Ind.
W. H. Laws, Lavaca, Texas.
John Nebel & Son, High Hill, Mo.

SPECIAL NOTICES.

We will pay 25c each for a limited number of copies of GLEANINGS for Feb. 1, 1892.

OUR EARLY PURITAN POTATOES.

By an error in our seed list, published in our last issue, the above potato was advertised at last year's prices; whereas the price in italics at the bottom of the list should refer to Early Puritans as well as to all the others. Potatoes are worth more than \$1.50 in Medina, at present, for table use.

PANSY SEED FOR SUBSCRIBERS.

We have a new supply of papers of mixed pansy seeds such as we had last season. Any one who sends a dollar for GLEANINGS can have a packet free, providing he mentions it at the time, and his name is not entered for any other premium; otherwise the price will be 10c per packet. These packets of pansy seeds are usually sold for 25c. By the way, I should be glad to get a report from those who sowed the seed last season.

THICKNESS OF TOP-BAR IN OUR FRAMES.

A great many of our patrons seem to have the impression that our so-called thick-top frames are the only ones having thick top-bars. These have top-bars $\frac{1}{8}$ in. thick; but where frames are accurately spaced, as in the case of the Hoffman, closed-end, or Van Deusen frames, top-bars $\frac{1}{8}$ thick are just as much a preventive of burr-combs, and are abundantly heavy for strength. The added $\frac{1}{8}$ inch to the top-bar of the thick-top frame is necessary only where frames are not well spaced, as they are not likely to be without some kind of self-spacer. Remember, then, that all our frames have thick and wide top-bars, except the old-style all-wood frame and metal-cornered frame, which have top-bars $\frac{1}{8}$ x $\frac{1}{8}$.

Leahy M'f'g Co.,

Undoubtedly the Largest Plant in the West,

Built exclusively for the manufacture of Aparian Supplies. One and One-Half Acres Floor Space. We sell as Cheap as the Cheapest, and our goods are as Good as the Best. Parties will do well to write us for estimates on large orders. We will send you our catalogue for your name on a postal card. Address LEAHY MFG. CO., Higginsville, Mo.

In responding to this advertisement mention GLEANINGS.

NOW, FRIENDS, LOOK HERE!

I sell the Nonpareil Bee-Hive, White Poplar Sections, Italian Bees and Queens. Price List free. Write for one.

A. A. BYARD, West Chesterfield, N. H.

In responding to this advertisement mention GLEANINGS.

Comb-Foundation Mills.

Made by

**W. C. PELHAM,
Maysville, Ky.**

1-5db

In responding to this advertisement mention GLEANINGS.

IF YOU WANT BEES

That will just "roll" in the honey, try Moore's Strain of Italians, the result of twelve years' careful breeding. I am now booking orders for the coming season. Send for circulars for 1891, and see what my customers have to say.

J. P. MOORE, Morgan, Pendleton Co., Ky.

In responding to this advertisement mention GLEANINGS.

LOOK HERE! Do you want a grocery with good business, in good location?
3tfdb **BOX 40, German, Darke Co., O.**

Wants or Exchange Department.

WANTED.—To exchange 1 lb. thin Vandervort fdn. for 2 of wax. Samples and testimonials free.
2-7db **C. W. DAYTON, Clinton, Wis.**

WANTED.—To exchange fruit-trees, for a 10-inch foundation-mill.
JAMES HALLENBECK, Altamont, Albany Co., N. Y.

WANTED.—To exchange Acme harrow, swell-body cutter, and Planet Jr. horse hoe and cultivator, for Barnes saw, bees, honey, or offers.
2-tfdb **MODEL STAMP-WORKS, Shenandoah, Ia.**

WANTED.—To exchange Excelsior hand-linking press, 25 fonts type, material, etc., also 5 vols. American Encyclopaedia, for honey (crop 1891). A rare chance for smart boy to make money. Write for particulars.
2-3d **S. S. LAWING, Henderson, Webster Co., Mo.**

WANTED.—An active Christian who understands the management of bees, etc., to take one-third less or more, interest. Location better than—well, I will not say; write any way.
2-tfdb **P. O. LOCK B. N., Williamson, N. Y.**

WANTED.—To exchange, 1 saw, with counter-shaft and belt. Will exchange for wax.
2-3d **L. L. EISENHOWER, Reading, Pa.**

WANTED.—To exchange hand-made crayon Portraits, 18x22 size, for 100 lbs. good honey. Satisfaction guaranteed. Send your photo to
2-3d **J. M. WELLS, 1552 Monsey Ave., Scranton, Pa.**

WANTED.—To exchange apiary of 150 colonies of bees. Will take any kind of farm stock, goods or groceries.
ANTHONY OPP, Helena, Ark.

WANTED.—To correspond with parties having potatoes, onions, apples, and honey for sale. Prompt attention given to correspondence. Consignments solicited. Prompt returns made.
EARLE CLICKENER, 121 So. 4th St., Columbus, O.

WANTED.—To exchange tested or untested Italian queens for sections or 6-inch Root foundation mill.
3-4d **J. W. TAYLOR, Ozan, Hempstead Co., Ark.**

WANTED.—To exchange strawberry-plants, the leading varieties, for poultry.
3-4d **DOUGLASS BROS., Hamburg, Mich.**

WANTED.—Situation with a bee-keeper, fruit-grower, or market-gardener.
3d **R. H. BRICKER, Slate Lick, Pa.**

WANTED.—Situation, by a single man, with some one in the South, to work in an apiary; willing to do other work. Can give reference. Address
3d **A. J. HUSKEY, Marystown, Johnson Co., Tex.**

WANTED.—To exchange Black Cochin chicks for first-class magic lantern. They are No. 1 birds, and the best of winter layers; and should like to exchange bees for Golden Wyandott chicks. I would keep bees until spring. Good reference given.
3tfdb **D. F. LASHIER, Hooper, Broome Co., N. Y.**

SEND 10c and the names and addresses of 10 bee-keepers and we will send you a monthly paper, "Buckeye Farmer" for one year.
3-4d **BUCKEYE BEE SUPPLY CO., New Carlisle, Ohio.**



27 In responding to this advertisement mention GLEANINGS.

INCREASE YOUR HONEY-CROP

10% to 25% by getting the Five-Banded Golden Italians. Took **First Premium** at Illinois State Fair in 1890. The judge said: "They were the quietest bees on exhibition; the drones were almost pure yellow." Warranted queens, \$1.25; Tested, \$2.00; Selected Tested, \$3.00. Order now, pay when queens arrive. Send stamp for price list.

BARRED PLYMOUTH ROCK EGGS FOR SALE.

Good reference given.

S. F. & I. TRECO, Swedona, Ill.

27 In responding to this advertisement mention GLEANINGS.

CHICAGO BEE-KEEPERS' SUPPLY CO.

OFFICES:

65 CLARK ST., ROOM 14, CHICAGO, ILLINOIS,
and TOPEKA, KANSAS.

Manufacturers of and dealers in bee-keepers' supplies. For prices of bee-hives, sections, shipping-crates, frames, foundation, smokers, etc., write for circular and special prices before placing your order.

J. B. KLINE, Sec.

1tfdb

Please mention this paper.

ALLEY'S IMPROVED AUTOMATIC SWARM-HIVER.

Thoroughly tested, and guaranteed to **SELF-HIVE** every swarm that passes through it. Sample mailed for \$1.00.

AMERICAN APICULTURIST one year and Swarmer by mail, \$1.50. Sample **APICULTURIST** with full description of **SWARMER**, illustrated, free. 1-4db **H. ALLEY**, Wenham, Mass.

27 In responding to this advertisement mention GLEANINGS.

NEW * FACTORY.

Bee-Hives, Sections, Frames, Etc.

We have moved into our new factory, which is the largest and most complete in the world, we make the best goods, and sell them at the lowest prices. Write for free illustrated catalogue.

G. B. LEWIS CO.,

WATERTOWN, WIS.

17-tfdb 27 In responding to this advertisement mention GLEANINGS.

THE CANADIAN

Bee Journal

Edited by D. A. Jones.

75c. Per Year.

Poultry Journal

Edited by W. C. G. Peter.

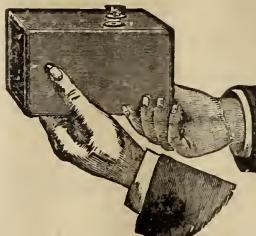
75c. Per Year.

These are published separately, alternate weeks, and are edited by live practical men, and contributed to by the best writers. Both Journals are interesting, and are alike valuable to the expert and amateur. Sample copies free. Both Journals one year to one address \$1. Until June 1st we will send either Journal on trial trip for 6 months for 25 cents.

The D. A. Jones Co., Ltd., Beeton, Ont.

27 Please mention GLEANINGS.

NEW KODAKS.



"You press the
button,
we do the rest."

SEVEN NEW STYLES AND SIZES, ALL LOADED WITH TRANSPARENT FILMS.

For sale by all Photo. Stock Dealers.

1-2-3-4d

THE EASTMAN COMPANY,
ROCHESTER, N. Y.

27 In responding to this advertisement mention GLEANINGS.

The **BEE-KEEPERS' REVIEW** has been enlarged, a cover added and the price raised to \$1.00. Never mind if you have seen copies of former

E issues, send for a copy of the last number, sent free, read it, admire it, and then subscribe. Address **W. Z. Hutchinson, Flint, Mich.**

27 In responding to this advertisement mention GLEANINGS.

NEW FACTORY. LOW PRICES.

Eight-frame Chaff Hives. Closed-end, or Hoffman Frames, a specialty. One and Four piece Sections, etc. Send for circular.

WM. BURDSAL,
Lebanon, Ohio.

1-4db 27 In responding to this advertisement mention GLEANINGS.

FOUNDATION & SECTIONS are my specialties. No. 1 V-groove Sections at \$3.00 per 1000. Special Prices to dealers. Send for free price list of every thing needed in the apiary.

M. H. HUNT,

1tfdb **Bell Branch, Mich.**

27 In responding to this advertisement mention GLEANINGS.

JUST OUT.

SOMETHING ENTIRELY NEW IN

HIVES!

CIRCULAR FREE.

Address

JAMES HEDDON,

DOWAGIAC, MICH.

2-3-4d Please mention this paper.



Vol. XIX.

FEB. 1, 1891.

No. 3.

TERMS: \$1.00 PER ANNUM, IN ADVANCE;
2Copies for \$1.90; 3 for \$2.75; 5 for \$4.00;
10 or more, 75 cts. each. Single num-
ber, 5 cts. Additional to clubs may be
made at club rates. Above are all to
be sent to ONE POSTOFFICE.

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PUBLISHED SEMI-MONTHLY BY
A. I. ROOT, MEDINA, OHIO.

Clubs to different postoffices, NOT LESS
than 90 cts. each. Sent postpaid, in the
U. S. and Canadas. To all other coun-
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cts. per year extra. To all countries
not of the U. P. U., 42cts. per year extra

STRAY STRAWS
FROM DR. C. C. MILLER.

BEES had best be broodless yet.

The *Apiculturist* for January is a souvenir
number with a nobby cover.

IF ALLEY doesn't stop fooling with that self-
hiver he may make a success of it.

THE RAMBLER thinks there is a bonanza be-
fore us in developing a bee that will work on
red clover.

"TO SELECT WELL among old things," says
American Bee Journal, "is almost equal to in-
venting new ones."

BAIT SECTIONS in supers are strongly recom-
mended, in *Api.*, by A. C. Tyrrel, as a partial
preventive of swarming.

ANOTHER in the dairy business. The *Bee
World* is going to give, "as it were, the cream
of apicultural literature."

DZIERZON, at the age of 80, is living a quiet
life, at Brieg, Silesia—just the age of Lang-
stroth, who was 80 last Christmas.

UNITING BEES by spraying with cold water is
recommended by *C. B. J.* It cautions against
the use of flour if the bees should get wet.

An Austrian bee-keeper has invented an ar-
tificial comb made of tin, having cells the nat-
ural size. Didn't Quinby do that long ago?

THE NATIONAL BEE-KEEPERS' UNION is in
good shape financially—\$621.18 in the treasury.
It's a power, for all it has only 331 members.

THE AMERICAN BEE-KEEPER is beautifully
gotten up. Let's see. We've had *A. B. J.*,
B. B. J., *C. B. J.*, and now we have *A. B. K.*

THE *C. B. J.* has started opposition to the
Review in the dairy business. It's going to
give "the cream of all apicultural literature."

WIDE SPACING in the super, to keep the
queen from laying there, R. M. Reynolds says.
is all bosh. He has tried it 14 years with 275
closed-end frames.

In the month of January,
Likewise the month of February,
The busy bees they store nary
A drop.

"IN CUBA," says A. W. Osborn, in *A. B. K.*,
"500 colonies can be kept in one apiary any
time of the year, but they must be hybrids, not
pure blacks or Italians."

ARTIFICIAL COMB is one of the just-going-to-
be things in Cincinnati this time. Allen Prin-
gle, who tells about it in *C. B. J.*, doesn't en-
thuse over it to an alarming extent.

THE "HEDDON POLLEN - THEORY," Heddon
thinks, "is now a practical, settled science."
May be; but sometimes he calls a thing settled
just because it agrees with his opinion.

MRS. L. HARRISON, in *A. B. J.*, resolves to
"endeavor to have one-pound sections weigh
one pound." When you get 'em all to weigh
exactly a pound, Lucinda, tell us just how you
do it.

THE BEE WORLD is the name of a new 16-
page monthly, 50 cents a year, published at
Waynesburg, Pa., by W. S. Vandruff. A paper
of the same name was published years ago,
wasn't it?

DZIERZON SAYS: "The want of air fit for
breathing, and perhaps also of water, is the
cause of bees becoming restless, which ignorant
and superficially informed people attribute to
excessive heat."

NUMBER Two, in *Canadian Bee Journal*,
wants to know about "close-framed friends,"
in *GLEANINGS*, page 891. It's "closed-frame
friends," Number Two. There is no such thing
as "close-framed friends."

SOME SAY ventilation of the cellar is not
needed; that upward ventilation of the hive

will keep the air pure. Now look here; how much upward ventilation will make the air pure in a cellar filled with rotten cabbage?

MOUSE POISON, as prepared by P. Lattner (*American Bee Journal*), is a tempting dish. Make dough for a sweet cake, mix in it powdered strychnine, and bake. Must be capital; but, my! if the children should get hold of a piece!

COLD, according to Heddon, is the prime cause of bees consuming pollen, and the consumption of pollen in winter the sole and direct cause of diarrhea. Wouldn't it be shorter to say that cold is the prime cause of diarrhea?

THE C. B. J. is going to have, after Feb. 1, "machines which will cast every line of type as it is set, and will do about three times as much work as an ordinary compositor." Say, Mac, will it have an automatic proof-reading attachment?

THE MANAGER of the Bee-Keepers' Union says, "It will take money to do it, but it is the Supreme Court decisions that we need, for they will do more to guarantee to bee-keepers their rights and privileges, than any thing else!" Wouldn't it cost less to get some good laws made?

DIBBERN'S HIVE-CARRIER is much the same as my rope. Instead of being all rope, it is "two square hard-wood sticks, a little longer than the hives, with pieces of stout cloth tacked between the ends." Carry by the cloth. His will be fitted on the hives more readily. Mine will stir up the bees less.

THE NEBRASKA BEE - KEEPER is making trouble. *American Bee Journal* inquires if it has met its death, and GLEANINGS announces its birth on the anniversary of the same. It's too good looking to die unregretted. Nearly every one of those which died had a look as if somebody made it himself.

GERMANY is ahead of us. Instead of trying to secure for bee - keepers their rights through a series of tedious decisions, they have got a square law: "We, the king, decree: The privilege of bee-keeping to all inhabitants on their own property;" and, "Apiaries will be protected by civil right and law." How much of that Union's \$600 would it take to get us such a law?

TAPEWORM REMEDY.—The *Medical Brief* says: The most successful pumpkin-seed remedy is made as follows:

Peeled pumpkin seeds, - - 3 ounces.
Honey, - - - - - 2 ounces.
Water, - - - - - 8 ounces.

Make an emulsion. Take half, fasting, in the morning, remainder half an hour later. In three hours' time two ounces castor oil should be administered. Used with great success.

GENERAL CORRESPONDENCE.

QUEEN-REARING, ETC.

ABOUT THOSE CELL-CUPS, AND WHY DR. MILLER FAILED WITH THEM.

On page 19 I see that our friend Dr. Miller made nearly an entire failure in using my plan of rearing queens in artificial cups during the past year, and says: "I'd like to know what the trouble was." Beside me, also, lies a letter from another person, residing in Bloomington, Ill., in which he says that he has "utterly failed in getting a single cell built out from the

cups," and closes his letter by saying, "Could you not give us an article in GLEANINGS that would throw some light on the subject?"

I am very much surprised at these failures, for I have letters from Texas to Canada, and from Maine to California, telling of the success the different individuals have had in rearing fine queens by this artificial-cup plan, used over queen-excluders. If the complaint had been about getting the queens fertilized when tried out of the honey season, I should not have been surprised: for I find that success can generally be obtained only during a heavy honey yield, in getting queens thus fertilized, although some colonies will keep laying queens in both stories through the whole season.

Now, not knowing all of the circumstances connected with these failures reported above, I do not know that I can give the reason why. I have never had less than three cells built from a single trial of from twelve to twenty cups, in all of my seven years' trial of the plan: and during the last five years I have reared all of my queens by this plan at all times, except very early in the season and late in the fall, at which times there will not be bees enough above to make a success of queen-rearing. While I have never had less than three cells completed, I have, time and time again, had the whole twelve or twenty, according to the number of cups put on a stick, completed, and the average number for the five years could not have been less than two-thirds of all the cups started. I think that Ernest will bear me out in this last, as he saw an average of the work done, he selecting the hives he wished opened. To those who do not meet with success when trying the plans given in Chapter VII. of my book, I would suggest that they try the plan, using a colony made queenless and broodless, as given in Chap. VI., only using the artificial cups instead of the queen-cups, as there spoken of, and put royal jelly in these as I directed in Chap. VII. If they fail then, I shall not know how to account for it unless they are not able to handle the little larva carefully enough so as not to injure it. After being successful with the queenless colony, next try it over the queen-excluder, always remembering that unsealed brood should be above when the prepared cups are given, and that the bees should be liberally fed if no supplies are coming from the fields. It is also well to allow these two frames of brood to stay "upstairs" 24 hours before the prepared cups are given to the colony.

Now, dear reader (any one who should happen to fail in using the plan), don't think hard things of Doolittle, for I have no more interest in "scientific queen-rearing" than I have in the A B C or any of the other bee-books, except that it is my "baby." I let the manuscript for the book go for less price than I get for this manuscript which I am at this moment writing, giving the whole thing to the world free, except the compensation for my time in writing the manuscript, and sent out the matter *with the only wish* that it might bless the bee-keepers of the world, many of whom are being blessed, if their words are a criterion to go by.

Some seem to think that the size of the perforations in the zinc excluder has something to do with the success or failure of raising queens in an upper story; but I think this is a mistake. The larger part of that in use in my apiary is the old Jones make, which is large enough to let many smallish queens through, while the rest in use is that sent out by Dr. Tinker. The Tinker make is the finest of any thing I have ever seen, and is simply perfect; but, so far as I can see, it gives no better results in queens than do the old uneven perforations of former years.

BEES ROARING.

Another correspondent writes: "It has been cold of late, and has now warmed up to quite an extent. Upon passing about among the bees I find some colonies which are roaring in a way similar to what they do in the summer. Can you tell me what the trouble is? and is it a sign of diarrhea?"

Bees having the diarrhea to an extent sufficient to spot the hives on the inside, generally give forth the roaring sound spoken of by the correspondent; but it is a rare thing that any single colony becomes thus uneasy so early in the season, much less a large number of colonies. From former experience along this line I should say that, during the cold spell preceding this roaring, the bees consumed nearly all of the unsealed honey inside of the cluster; and when the warmer weather occurred, the cluster broke up and the bees went out around on the sealed honey, uncapping it and taking more honey into the cluster, or what will be the cluster when re-formed again. This always causes a merry hum to be heard; and, if I am right in the matter, it could be no sign of diarrhea. Should the roaring be long continued with but slight abatement, the bees will gorge themselves with honey, and diarrhea will very likely result. Should it continue, I would look into the matter some warm day to see whether I could find out what the trouble is, experimenting on only one or two at a time, to see if matters could not be improved. It may possibly be that a mouse has got inside of these hives, and, by his running about, the bees are disturbed. If so, get him out and fix the entrances so that none can possibly get in again.

G. M. DOOLITTLE.

Borodino, N. Y., Jan. 12.

[As I have said before, I repeat again, that the artificial cell-cups that I saw at Doolittle's were accepted and built out by the bees to perfection. In our own apiary we did not have entire success with the cups, but some were completed, and hatched queens.]

E. R.

MANUM'S VISIT CONTINUED.

OVERSTOCKING: HOW TO LOCATE OUT-APIARIES;
IMPORTANCE OF WIND-BREAKS: MOUNTAINS AND HILLS, AND THEIR EFFECT ON APIARIES.

"Good morning, Mr. Barber: this is a beautiful morning."

"Good morning. Why, Manum, you came near getting the start of me. I am not accustomed to sitting up so late as we did last night, and I overslept this morning. Well, here is the paper you called for last night; and while you are mapping out your apiaries I will get breakfast."

Breakfast over—and a good one too—Mr. B. takes the map, and, after looking it over carefully, asks a few questions.

"Manum, how high is that range of mountains east of you, that appears so very near?"

"I believe, Mr. B., that they are 1200 feet high."

"I suppose the whole side of that mountain is covered, more or less, with basswood, is it not?"

"No, not by any means. If it were, I should not care to exchange locations with you. There are, however, a few basswoods scattered here and there on the mountain-side, and at the base they are more plentiful; but the hills, as we call them, that you see scattered over the country, have a good many basswoods on them;

and as my apiaries are nearly all located near such hills, I have a fair basswood range."

"What do these double circles indicate, where there is a circle within a circle?" asks Mr. B.

"Those indicate apiaries belonging to other parties. For instance, Nos. 1 and 2 are owned by Mr. Charles McGee, who, by the way, is one of my boys, or was a few years ago, and he is the Charles I was talking to in GLEANINGS of Dec. 1. Nos. 3 and 6 are Mr. H. Stilson's apiaries. No. 4 is Mr. Fred Dean's; No. 5, E. Cox'; No. 7, T. Fish's; No. 8, E. A. Hasseltine's; and Nos. 9 and 10, Mr. L. O. Thompson's. The single circles indicate my own apiaries."

"Well, Manum, it seems to me that your territory is pretty well occupied, and I should think overstocked."

"Yes, Mr. B., I think there are bees enough on this little territory, especially in a poor season. When I started in the business there were none within 20 miles of me, except a few box hives here and there."

"What are all these marks, zigzagging from one apiary to another?" asks Mr. B.

"Those are the highways which I travel over in going to my apiaries."

"How far from your home are your apiaries, Mr. M.?"

"They are from 3 to 15 miles from home. These little squares on the diagram represent square miles; hence by counting the squares between each apiary you get the distance they are apart; and the circles, as you see, represent a radius of two miles from the center."

"I notice that your Meach yard is nearly surrounded by hills. Do you consider the hills of any advantage?"

"Yes, most certainly. In the spring the hills are a protection from winds; and as there are many basswoods on them they are an advantage in that respect, as they afford good forage all around and near by. I consider this my best basswood range and my poorest clover range. This year in August, I had 7 colonies starve in this apiary before I was aware they were so short of stores."

"How happened you to locate two apiaries so far from home; viz., the Ferrisburgh and Varnay yards?"

"I was obliged to go that far to get beyond and out of the range of my neighbors, as you see I was completely hedged in."

"I notice, Mr. M., that some of your apiaries are so near each other that they overlap each other's territory. Do you think they do as well where they are so near together?"

"No, sir. I do not, especially in a poor season; but in a good season I see no difference, all things being equal. I should prefer to have my yards five miles apart if I could so locate them; but owing to the formation of the hills, and the difficulty in finding just the right spot, and also permission to set an apiary, I was obliged to locate some yards nearer and some further apart than I really wished to. Bee-keepers who have never located out-apiaries can not fully comprehend the difficulties one has to contend with in selecting a suitable location. When selecting one I aim to acquaint myself with the surrounding country, after securing the spot for the yard. I go out prospecting through the fields and woods, to satisfy myself whether the location is a suitable one or not; and by the aid of a strong field-glass I am able to determine whether I am in a good basswood range without very much traveling, if I do this prospecting during or soon after the basswoods bloom, as then the blossoms and blossom-leaves enable me to see a basswood-tree at a distance."

"Do you always select a sheltered spot for your yards?" asks Mr. B.

"I always aim to, that my hives, may be protected from cold winds in the spring; for I notice that, where my yards are most protected, the colonies in them are the strongest when the honey season opens; hence from these I get the best results, especially in poor seasons. To illustrate: My Williams' apiary is on a sidehill, the upper half being well protected from the southeast and north wind. The lower half is protected only from the south wind, and that not fully. Now, it is a fact that the upper half always winters better, and the colonies are always strong at the approach of clover bloom; hence I always get much more honey from the upper half of that apiary. It is very seldom that I lose a colony in winter or spring from the upper half; and another feature that is very noticeable is, I very rarely have to feed those colonies in the upper half, as they usually have enough honey for winter, or nearly so; hence, from my experience with this apiary, I am satisfied that protection is very essential, and I am building high tight board fences, as fast

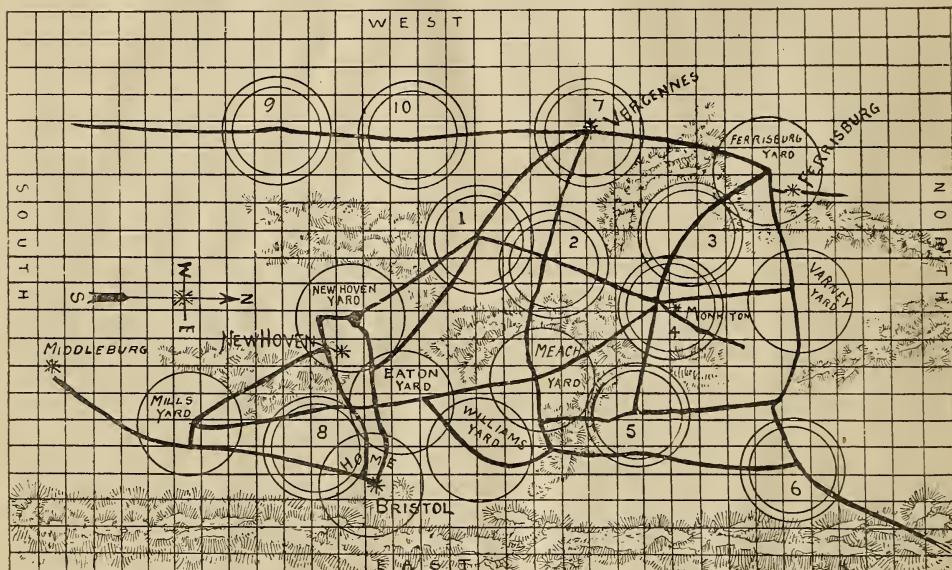
up the moisture. He aims to keep the temperature up to 50, and at no time does he allow it to get below 45. Mr. Barber tells me that his loss in wintering very rarely reaches 3 per cent. He is a very careful manager, and has made bee-keeping a success, and, I understand, is quite forehanded, having made the most of his money in the bee-business.

In order that we might have a longer time to visit, and a better opportunity to view the country, Mr. Barber took me to Canton, a distance of six miles from his house, where I took the cars; and, as I bade him adieu, I did so with the feeling that from him I had received a vast amount of knowledge which well repaid me for my journey.

A. E. MANUM.

Bristol, Vermont, Jan., 1891.

[Your map, Mr. Manum, is suggestive and interesting—the more so because it shows the mountains, hills, and roadways, and how you have to drive to reach each one. The first thing that attracted my attention, when I ar-



OUT-APIARIES AMONG THE MOUNTAINS IN THE VICINITY OF BRISTOL, VERMONT.

as I can get to it, around such of my yards as are not well protected by nature; and, Mr. Barber, I am more thoroughly convinced than ever, since we have had these five poor seasons in succession, that, in order to be successful, we must have our colonies *strong* at the commencement of the honey season."

"Manum, do you ever move your bees from one yard to another in the fall, to have them fill up for winter?"

"No, I do not, because there is not much difference in one of my locations from the others, so far as fall honey is concerned."

At this point we arrive at Mr. Barber's bee-cellars, where I find 80 colonies already stored for winter. This cellar, if I remember correctly, is 20 x 30 feet. It is not a dry cellar: and as the bottom is often very wet, the hives are set on plank, which are set on hive-caps some 15 inches high, and are packed in as closely as they can be conveniently, and four hives high. Mr. B. removes the honey-board, and spreads a piece of heavy ducking over the frames, and over this a cushion three inches thick to take

rived at Bristol, was those mountains on the east. "Oh!" said I, "Mr. Crane" (with whom I was riding), "that is where Mr. Manum gets his basswood honey." But I was a little surprised to learn that there was little or no basswood on those mountains, and that his reliance for honey from this source is from certain hills; but those mountains furnish that beautiful Vermont white poplar for sections, so popular with the Eastern bee-keepers. I am doubly sorry now that I could not, or, rather, did not, steal the time to drive around with you over those zigzag roadways, and visit some of those yards. I learned a good many things when I went around the country with Mr. Elwood, and I have no doubt at all but that I could have picked up many a valuable item from you in a similar drive.

Overstocking must be a rather complicated problem with you. Why, what a lot of *other* bee-keepers there are around you! I should think you'd quarrel, so close together as you are in some cases; but I am reliably informed that there is the best of feeling among all of you,

even though the proximity of your several apiaries must cut off, to a certain extent, your earnings from each apiary. When we get our apiaries down on a map we find out for the first time, perhaps, how close we are together. Say, Dr. Miller, what would you do in such a locality? Would you preach bee legislation, priority claim of locality, or would you move out?]

E. R. R.

THE DOVETAILED HIVE.

SUGGESTIONS AND CRITICISMS.

Friend Root—I have studied your Dovetailed hive well, I think, especially in connection with the subject of frames, i. e., thick top-bars, closed ends, etc.; and since you ask for criticisms and suggestions, and I have some to give, here goes:

I am thoroughly dissatisfied with the hive I have been using. I think, after nine seasons' experience, together with my study of hives through the medium of books, journals, etc., I have a pretty good idea as to what kind of hive I do want. Your Dovetailed hive comes nearer to that idea than any other now on the market, so far as I know. I have had a few in use the last year similar to it, and, after a year's trial, I am sure I have not miscalculated my preference, unless it may be in the matter of a brood-frame. But I do not like your hive in the following particulars:

1. I think that, although I have never used a closed-end frame, it is, nevertheless, the style of frame I want. But in two respects the combination of that frame with the Dovetailed hive is faulty.

(a) If I understand your description of the hive, the frame is of the same length as the "swinging" frame, having a bee-space at the end. I don't know what anybody wants of a bee-space back of closed-end frames. To me it would be a most prodigious nuisance. The frame should be about $\frac{1}{8}$ of an inch shorter than the brood-chamber inside, leaving $\frac{3}{8}$ of an inch play at each end. This would insure ease in manipulation where there is apt to be slight irregularity in length.

2. When you have a hive and frame so nearly adapted to reversing, either in part or entirely, why not have them quite so? The hive would be made with the ends rabbeted so that, if any one wanted to hang a frame in the hive he could do so, but have a stick of the right size to fill it up if desired. A single wire nail would hold it in place, and it could thus be easily removed. I would not make the frame to hang, but to sit on rests fixed on the bottom-board. Either one of two devices would do well for rests. One would be a tin T. $\frac{3}{8}$ of an inch high, tacked on to the bottom-board, front and rear. The one in front would have to sit back about an inch from the entrance. The other device would be a metal strip at each end, $\frac{1}{8}$ inch thick, by $\frac{3}{8}$ wide, set its thickness in notches in the side cleats of the bottom-board, and just inside the ends of the brood-chamber. If there should be any danger of these strips bending from the weight of the combs, about two small blocks could be placed under each for props. We should thus have a brood-chamber and a frame, either one of which could be easily reversed. To reverse the entire hive we could simply turn it upside down, loosen the wedge or screw, press the frames to their place, and then key up again. Top and bottom bars should, of course, be the same thickness, and that not more than $\frac{1}{8}$ of an inch, perhaps less. Secondly, you make your top-bar $1\frac{3}{8}$ inches wide, leaving only $\frac{1}{4}$ inch between them. Is not

that rather close? I should think one would frequently want to take out a frame without moving other frames or wedges. There would be a poor chance to get a finger-hold. I know the object of such a top-bar is to prevent burr-combs. This brings me to my "thirdly."

I am not prepared to give up the honey-board. I have worked several years without it and a few years with it, and I am quite in love with it. That, you know, will go far toward preventing burr-combs. But, aside from that, the honey-board has three valuable features:

(a) I would have it queen-excluding always. It is comparatively seldom, it is true, that a queen will go into section boxes. Still, she is liable to go with a cluster anywhere when the brood-chamber is crowded, especially when there is a paucity of drone comb below in swarming time, as I desire there should be. I have known it to happen half a dozen or more times a year, and that is often enough to spoil considerable honey. When working for extracted honey especially, the queen will always go into the upper story unless prohibited, and I do not want her there.

(b) When hiving in contracted brood-chambers, much pollen is carried into the sections unless something is done to prevent it. A queen-excluder reduces the quantity to such a minimum as to amount to practical prevention.

(c) Bees will often gather up the cappings of honey or brood as they are gnawed off the combs below, and work them into the combs above, which mars the honey greatly. I have never heard any complaint of this from others, but I have often noticed it. But I have never known it to happen above a queen-excluder. The young bees are also less prone to travel over and stain the lower part of the sections. Wide and thick top-bars, of course, will have the same effect to some extent, but I think the honey-board is better.

(d) I would have the depth of the frame reduced at least two inches. This would be too great an innovation to urge upon you; but I wish the standard frame were not more than seven inches deep.

There, you have my idea before you. Introduce the modifications I have given, and I believe you will have the model hive for comb and extracted honey.

GEO. F. ROBBINS.
Mechanicsburg, Ill., Jan. 10.

[If you will refer again to our description and engravings of the improved Dovetailed hive, shown on page 745, Oct. 15, last year, you will see that, where the closed-end frames are to be used, the ends are to be enough thicker to take up the extra space, but leaving a play sufficient to remove the frames. Note carefully the sectional drawings on 745. No, it would not do to leave the usual $\frac{1}{4}$ inch between the closed ends and the end of the hive. As we construct them for the Dovetailed hive, they can be used either to stand on or hang. A hanging closed-end is a little better for the ordinary hives in use. It will not topple over, and will kill fewer bees. Of course, if it is desired to make it reversible, all you have to do is to draw the nails, or, better, leave them out and use instead the bottom-stands.

In regard to queen-excluding honey-boards for comb honey, you are against the great majority of comb-honey producers, who say they do not want the excluders. For extracted honey they are a good thing.

Are you sure you are right about the excluders keeping pollen from the sections? Of the great representative bee-keepers that I visited last summer, not one, if I remember correctly, used excluding honey-boards for comb honey.

Pollen in the sections is usually the result of too much contraction in the brood-nest; and the tendency of the times is against contraction to less than 8 L. frames. It is far better to have a big, rousing colony on 8 frames than a medium one on 4 or 6 frames. If perforated zinc will keep pollen out of the sections, it ought to out of the brood-nest when drone-guards are on.

What you say regarding cappings from old brood-combs is, to a certain extent, true; but I don't quite see how perforated metal will make much difference, unless it be the slight obstruction from the perforations. Some of the prettiest and whitest comb honey I ever saw was produced in Vermont and York State, without perforated zinc honey-boards. As supply dealers, and the largest manufacturer, of perforated zinc, we ought to boom that article, whether for *comb* or extracted honey; but we don't want bee-keepers to buy it for *comb*-honey production if it is not needed.

I know that top-bars $1\frac{1}{2}$ inches wide leave rather scant room for the fingers. With a follower and fixed distances, either closed-end or Hoffman, it gives no trouble.

After you have used closed-end frames for a while, you may modify your views somewhat in regard to the plain, slatted honey-board. Fixed distances will permit of narrower and thinner top-bars in the riddance of burr-combs.]

E. R.

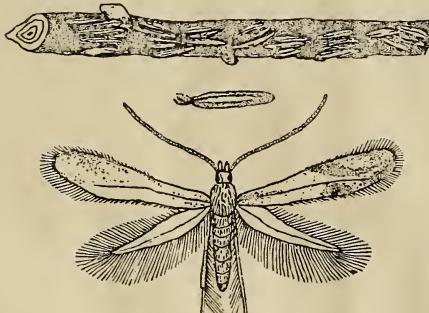
THE TINEID MOTH.

PROF. COOK TELLS US ABOUT THE LITTLE EGG-SHAPED COCOONS ON THE APPLE-TREES.

Mr. Chester Olmstead, East Bloomfield, N. Y., desires to hear through GLEANINGS of the eggs (?) which "literally cover" the twigs of his apple-trees. These are not eggs, though they look so much like them that it is not strange that Mr. O. mistook them for eggs. He, however, seems in doubt, for he adds, "I take them to be eggs."

These are the cocoons of a beautiful little moth, *Bucculatrix pomifoliella*, Clem.

As we see by the cut below (the single one is



shown natural size), they rest side by side on the twig, often as many as eight together. Sometimes they are so abundant that they do "literally cover the twig," as Mr. Olmstead states. They are a quarter of an inch long, white in color, and elongated, as seen in the figure. The cocoon is ribbed, and firmly attached to the twigs. Next spring a beautiful tiny moth will come from each of these cocoons, unless the pupa has been destroyed. This moth is less than an eighth of an inch long, and measures but little more than a fourth of an inch from tip to tip of the wings when the latter are spread. The fore wings are white, with yellowish reflection. There are three brown spots on each wing—one a mere dot at the tip of

the wing—as seen in the figure. The posterior wings are triangular, and beautifully fringed, as is generally the case with the *Tineid* moths. The moths lay their eggs early in the spring. In June the caterpillars may be seen eating the leaves. If disturbed they fall from the leaf, letting themselves down by a thread of silk which they spin for the purpose. They are nearly half an inch long when full grown; are dark yellowish green, reddish toward the head, which is brown. This first brood—the insect is double-brooded—spins its cocoons on the twigs, but among the leaves they are not so conspicuous as are the winter cocoons. The second moths come forth in late summer; the second larvae feed in autumn, and the brown pupae pass the winter in the elongated cocoons. Thus we have the life-history of this beautiful and interesting little *Tineid* moth.

These moths are so called because they belong to the family *Tineid*. As we should suppose, the moths of this family are very small. Thence they are sometimes called *Microlepidoptera*. Our common clothes-moths, some of the worst grain insects, and leaf-miners also, belong to this family.

In looking at these cocoons I find many with holes either at the end or on the side. These holes show that some parasite has eaten up the insects, matured, and gone forth to destroy other of our insect enemies. Again, on the buds of the twigs, and crowded in between the cocoons, many plant-lice eggs are to be seen. These are minute black eggs. They will hatch in the spring just as the leaves unfold; and the plant-lice which come from them multiply so rapidly that, unless checked by other insects—which is usually their fate—or the orchardist, they will do much harm.

These tineids are so small that they usually do little harm. If so abundant in June as to seriously damage the trees they would quickly succumb to the arsenites—the same that so speedily destroy the codling-moth and the canker-worms.

A. J. COOK.

Agricultural College, Mich., Dec. 22.

WEARING GLOVES.

DRESS FOR LADIES WHEN AMONG BEES.

In working with bees I always wear gloves. I think Dr. Miller has mentioned it in some of his articles, also, that he thought I would give them up some day. You need not tell him that I said so, but I don't believe I ever shall. Aside from the saving of stings (and gloves have saved me a good many stings), it doesn't seem to me as if I could ever endure the sticky propolis on my fingers.

I sew a pair of white sleeves securely to the top of my gloves, leaving no opening for the bees to enter. I use white, because the bees seldom, if ever, sting white. I used to fasten the sleeves to the shoulder with a safety-pin, but I found that very cross hybrids managed to get in a good many stings on my shoulders above the sleeves, as the sleeves did not reach quite far enough. I now make the sleeves very long, so they will reach well up on the shoulders, and fasten them together in the back with a little strap, buttoning them together in front with a similar strap. It takes much less time to put them on in this way.

One objection to wearing gloves is the time it takes to get rigged up for work. But I really believe I can work faster and better with than without them, for I do not feel so nervous about stings. Another advantage is, that they materially help to keep your dress clean—or, rather, the sleeves do.

There is one thing I decidedly do not like to do with gloves on; and that is, to clip a queen. I always draw a long breath when the operation is over; and I confess that, if Dr. Miller is within reach, I always carry them to him to clip.

I have never been able to get a glove that quite suited me. I have never tried rubber, as I imagined I should not like them, for the smell of rubber is very disagreeable to me. For some time I have used buckskin; but they are very heavy and warm, and decidedly uncomfortable, and, when well stuck up with propolis, are not very handsome, to say the least. I wish some one who has had some experience with rubber gloves would tell how he likes them, or any other kind of glove, for that matter. The subject is a very interesting one to me.

Perhaps if our bees were all pure Italians it might make some difference in my views. We have requeened all our colonies, giving them all Italian queens, so next summer I may have a chance to see how much difference it will make.

Another thing that bothers me is, to know what to make my aprons of. I have tried gingham, calico, and oil cloth. I don't like any of them. I want something that honey will not soak through readily, as I should like to keep my dress clean. By wearing two aprons at a time, and changing them very often, I have managed pretty well. But that is troublesome, and makes lots of washing, and I should like something better. I dislike the oil cloth, for it has such a disagreeable smell. I am thinking of trying bed-ticking this summer. It doesn't seem to me that honey ought to soak through very easily. I am afraid the objection will be, that it is so heavy and clumsy. Have any of the ladies ever tried it? If so, please tell us how you liked it.

EMMA WILSON.

Marengo, Ill., Jan. 12.

[My good friend, you are striking on real practical matters in your suggestions, and this is just what we want. By the way, why not have paper aprons, and burn them up as fast as they become soiled—something like the Japanese paper handkerchiefs? Honey and propolis, to say nothing of beeswax, are very trying on one's clothes. Like yourself, I always feel nervous when my hands are daubed with either honey or propolis. Our remedy is a cheap wash-basin and a towel. If it were not for the looks of the thing, some sort of apron would be a very convenient thing for men as well as for women, during the honey season. Can we not not hear from more of the women-folks who have been helping among the bee-hives?]

KEEPING RECORD.

HOW IT CAN BE DONE BY MEANS OF A BRICK ON THE HIVE-COVER.

Friend Root:—Allow me to offer a few suggestions, in line with Wm. Muth-Rasmussen's article in Dec. 1 GLEANINGS. The general criticism to all such plans is, that they are too elaborate, taking too much time to learn the system, and then the chances of the stones or bricks being moved out of their position by visitors or children; and even dogs and cats jumping on the hive might do it. For the bee-keeper who has but few colonies, some such plan might be best; but for him who numbers his hives by the fifties or hundreds it is too cumbersome. I have been thinking of a plan adapted to such by using bricks, which I think are much to be preferred to either stones or number cards, for the reason they can be turned in three positions, each of which can have its

meaning. These three positions in which a brick may be laid, viz., side, end, and flat down; by dividing the hive cover into three positions—front, rear, and center, would give nine points; and by dividing each of these positions into three parts, we have in all 18 points. Nor is this all. The brick may be placed on any one of these divisions in two ways—lengthwise of the hive or crosswise of the same, making in all over fifty different arrangements of the brick on a hive, which would certainly satisfy all the requirements of the most exacting.

The information needed or desirable in regard to the contents of a hive may be grouped under three general heads:

1. Of bees. This would include brood, eggs, and larvae in all stages; also quality and quantity.

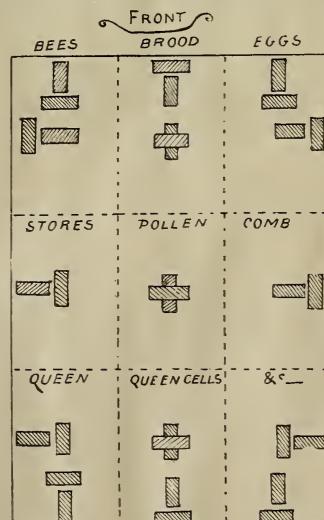
2. Stores, referring to both honey, pollen, and wax.

3. Queen, referring to quality, age, condition, etc.

Those for these three natural divisions of topics correspond with the three divisions or general places on the hive-cover; and, for convenience, say we call the front third the bee division: the central third the stores division, and the rear part the queen division. Then a brick placed anywhere on the rear third of a hive would mean something about the queen; on the central third, always something in regard to the stores; and one on the front third, always something in regard to bees or brood; and the absence of a brick from any of these places would signify that all is right, and no particular attention is needed.

Again, we might generalize and simplify our system by having the brick standing on end always mean immediate attention, and its position on the hive indicate in what particular point the attention is needed. Each bee-keeper can elaborate the system to suit his or her special needs.

Here is a figure of a hive-cover and its suggested divisions, which will make it clearer.



HATCH'S SYSTEM OF HIVE-RECORD BY BRICKS.

It might seem, at first glance, that one would need three bricks for every hive; but in practice it is not so; we have used a plan something like the above for years, although not so comprehensive, and find that one brick for each hive is usually ample. For keeping track of

queens, our plan is to mark the date of her birth at the time of clipping, which is done only in the spring of each year, usually in May, on the front of the hive, in small figures; thus, "89" would indicate that the queen in the hive thus marked is clipped, and that she was raised in 1889. Next year, when time to clip comes around, and I find a clipped queen in a hive, I simply make a dash under the old mark. This shows that the queen has been found, and always shows how old she is. If a queen with unclipped wings is found, this shows she was raised after the spring clipping was done the year before, and therefore must be of last summer's raising. The old date is rubbed out, and the new one substituted, leaving off the 18, as that is always understood. When the clipped queen comes out with a swarm, the date is rubbed off the old hive and put on the hive in which the queen is put. The fact that the date is erased from a hive shows it has swarmed. If one wishes to know which the swarms are, some other mark is necessary. I have used this queen-record for years, and find it better than any other I have tried or seen in use.

As to keeping a record of each hive as to times of extracting, I have never found it practical, preferring rather to go over the hives with supers on, and removing some frames from those which are full, and substituting empty frames from those not full, putting the full ones in their places, thus getting all or nearly all ready to extract at once, which means economy of time and labor, and usually the honey is none the worse for the longer time on the hive. I speak from an extracted-honey producer's standpoint, for I have never done much with comb honey, twenty colonies in one season being the most I have ever run for comb.

Ithaca, Wis., Dec. 13.

C. A. HATCH.

[Friend H., I like the idea of bricks, for several reasons. They are clean-looking, are not affected by the weather, uniform in size and shape, and stay securely where you place them. Something a little lighter, say half of an ordinary brick, would, perhaps do as well; but as we have not got it, perhaps we had better use the brick. I have always felt that stones, from their awkward, ungainly shape, give the apia-ry a disorderly appearance; then when you lift off the cover they are almost sure to roll off. Thanks for your suggestion.]

EXPERIENCE IN CARP CULTURE.

ONE OF OUR BEE-FRIENDS TELLS OF HIS SUCCESS.

Friend Root:—When you first began to publish notes on carp culture I at once became interested, having a fine site for a small pond. I had long contemplated building a pond for raising some common fish, cat or perch; but now I turned to the carp. I built a pond by making a dam across the valley, and another at the upper end 100 ft. distant, thus turning the brook, which is kept running by a spring, around the pond; but a second and smaller one is pouring into the pond, just strong enough to keep it full, or nearly so. When full of water it was $3\frac{1}{2}$ feet deep; but I soon learned that this was not sufficiently deep. In November, 1886, I introduced 10 carp, 18 months old. Shortly after this a severe winter set in, and I cut the ice to save the fish from suffocation; but I learned afterward that this was not necessary.

The spring of 1887 opened, and I kept a close watch upon my breeders, as I was anxious to have them lay; but I determined not to feed them, and that they should shift for themselves.

just as I would have treated common fish. I would notice the fish only on rare occasions; but I found out that they were all alive later in the summer, as some boys while in bathing kicked up so much dirt that all came to the surface, and appeared to gasp for breath. But no sight of eggs or young fish could be found. Not draining the pond, I can not tell absolutely whether any fish were hatched in 1887, but I believe not.

The winter of 1887 was very severe, and I kept cutting the ice as before; but the pond began to leak. Fortunately the leak was stopped; and when the spring opened, the pond was full of water.

This time I decided to feed them, and coax them to lay. I accordingly fed about 2 qts. of corn at one time. I would drop it down in a certain place, and every day I rolled up my sleeves and felt down to the mess, and it would disappear in two or three days; but I could never see the carp play about the feeding-place: but when it was all gone I would replenish it. Thus I fed them for nearly four weeks, when I saw them spawn, May 11, 1888, and in a few days the pond was just thick with eggs. I had thrown some willow branches into the water, and these were all covered with eggs. I then discontinued feeding them, and have not fed any thing since. I began to think that these eggs might not be fertilized, and failed to hatch, so I broke off some of the branches with the eggs adhering, about enough to make a button-hole bouquet, and placed them in a flat-shaped gallon jar filled with water, and set them out in the garden. In two days I found them all hatched. I counted about 40 fish; but they were so small, and had so much of a water color, that it was difficult to see them.

I left them in the jar, and in a few days they were all dead; but I had the satisfaction of knowing that the eggs in the pond were nearly all hatched, and no doubt the whole water was full of little fish. The cattle and hogs had access to the pond, and the latter would wallow in it to their hearts' content. I felt satisfied, for I wanted to test the carp in this way. The cows would stand in the water, and I was obliged to fence them off, as the water gave them sore legs. In August we began to notice young fish. I had the boys catch a few with hooks, and they were from five to six inches in length.

Late in October, 1888, we made an attempt to seine out some fish; but the seine was not long enough, and we happened to land a few of the spring hatch, 6 to 7 inches in length, and some of those I introduced in 1887, in the month of August, were stunted by their pond drying out. There were about 30 carp 5 inches in length, from the previous year's hatch. We also caught 5 of the larger ones, which we prepared for the table, and we thought them very palatable. Also a few very small perch were found. The winter of 1888 was very mild, and I watched for more eggs in May, but I did not find one. During these three years the pond had filled up with sediment so that but 18 inches of water remained, and I concluded that it was unsafe to let them winter in so shallow a water. I contracted with a neighbor to take all the carp that we might find. Dec. 4, 1889, we seined the pond, and landed, to our surprise, 180 young carp, of the 1888 hatch, measuring 10 to 12 inches in length, being very uniform in size. Also 5 of the old breeders, introduced in 1886, were caught, 22 inches in length, and weighing from 4 to 5 lbs.; and 24 of those introduced in 1887, weighing from $1\frac{1}{2}$ to 3 lbs., and measuring from 14 to 20 inches, and a solitary one of the 1889 hatch, about 3 inches in length, thus showing that some eggs were laid and hatched. Six perch.

about 6 inches in length, with 200 young, about 2 inches in length, were also landed. These six perch, I think, found their way to the pond by accident. They were only about 1 inch long in October, 1888. It is these in company with the carp that no doubt ate all the eggs or young carp if any hatched. But why did the 200 perch survive? I think they are somewhat more spry, and dodge the larger fish, and thus escape from the cannibals. Not feeding the breeders, and the chilly weather during May, may also have caused the shortage of eggs. You will notice that the growth of the carp does not approach that of many other breeders who take extra pains in feeding them and weeding out other fish.

The neighbor's ponds were very low during the latter part of 1890. Dec. 24 we seined one pond, which was too shallow to risk any fish in, and transferred them to another; and we find that the year's growth with all the different sizes is even smaller than it was with me. Along with the carp we found hundreds of perch and cat-fish, but could not find a single carp of this year's hatch. I believe if they had been undisturbed for years to come, with 270 breeders, no young carp would survive, even though some might hatch. Another neighbor introduced 30 carp 7 inches in length. In 1887 the pond was flooded. Later, and when we seined it in November, 1890, we found only 4 left. They weighed 7 lbs. each. Also several thousand common fish were found, but not a single young carp. No doubt these four carp lived on the wild fish, which accounts for their weight.

Mr. Root, I do wish you could have seen these four fish. They were as fat as hogs. After these careful observations I have come to the conclusion that the safest way for an ordinary farmer is to make a pond deep (7 feet or more), and proof against overflows. Then stock the pond with young fry in September. I think this by far the safest way to go into carp culture. I should be glad to hear from others who have experimented with carp. L. F. DINTELMANN.

Belleville, Ill., Jan., 1891.

[Friend D., we should also be glad to hear from others; but inasmuch as there is a journal devoted to carp culture, we think it best not to give very much space to it here. You bring out in your communication a fact of great interest to me: namely, that if the eggs be removed from the pond, and placed in a glass jar out in the sun, young carp may be hatched out by the million, perfectly secure from their voracious foes. My impression is, that the principal difficulty with carp-ponds in general is that common fish get in and eat the eggs and young fry. Our own pond has no communication with any other body of water; and yet common fish make their appearance as fast as we can get them out. They are probably brought in by the eggs adhering to the feet of wild water-fowl. Of course, drawing the pond off and sorting them out from time to time will keep these enemies in check. But it needs somebody with a good deal of enthusiasm in the business to follow it up.]

ERNEST'S NOTES OF TRAVEL.

AT DR. MILLER'S, CONTINUED: REVERSIBLE BOTTOM-BOARDS; MICE IN BEE-CELLARS, ETC.

The next morning, Monday, I arose, fully refreshed. The doctor wanted me to stop another day; but I told him I must take the train at noon.

"Well, then, we can not afford to waste any time," said the doctor.

I had a curiosity to know more about those

deep bottom-boards he is using, and so down into the cellar we went. He had already put in some 25 or 30 colonies, and the rest were still out. The doctor had told me, if he could only get me into his cellar he could convince me that his reversible bottom-boards were a good thing, and when there I had to assent that they were: although, of course, I insisted that Boardman's plan of leaving bottom-boards off entirely was just as good, and cheaper.

"But," said the doctor, "I can not carry hives of bees into the cellar with no bottom-boards, without the bees dropping out and flying all over."

"If you select a rather cool day, I do not think you will have very much trouble; at least, I do not have. Still, I admit that there is a little trouble, occasionally, especially with the hybrids. Latterly we have carried the bees into the cellar with the bottom-boards on the hives. Our carrying - bail catches under the bottom-board, and hive and all is carried in. When there the hive is lifted off its bottom, and placed in position, and so we bring in each hive. The bottom-boards are piled up in one corner of the cellar, and the bodies of the hives are stacked up, *a la* Boardman. So you see, doctor, we have no trouble about bees flying out."

"Yes," said he, "but don't you have trouble by a lot of bees clinging to the bottom-board?"

"We should have," I replied, "if we carried the bees in on a warm day. We wait till the temperature goes down to 20 or 25, and then the cluster will have contracted enough so that, when the hive is lifted off its bottom, there will be no bees adhering. I will make an exception for hybrids. The least disturbance will make them expand their cluster, and boil all over the bottom-board. As we do not keep hybrids to any great extent, and do not propose to, this trouble does not figure very largely with us. I admit, doctor." I said, "that the reversible boards are a splendid thing. As you do sometimes have a few hybrid colonies, your plan would have that advantage."

"But it won't do for me," said the doctor, "to pile the hives up *a la* Boardman. You may say it is not necessary to have mice in the cellar; but I have them, and can't very well keep them out. As I explained to you, I use this coarse-mesh wire cloth to close the entrance to all such vermin. It has a coarse mesh, you see, so the bees can easily pass out."

"Yes," I said, "circumstances do sometimes alter cases. My cellar is made entirely mouse-proof. Still, there was one little chap that crept in last winter. One Sunday evening while Mrs. Root and I were sitting before the grate fire, over the bee-cellars, we heard a peculiar sort of noise. The cat picked up her ears, and seemed interested, and cautiously crept to the point whence the noise proceeded. I said that would never do to have a mouse in the bee-cellars, so down I went with the lantern. I examined a number of bees on the floor, and found that the mouse had been eating at them. It was pretty dark in the cellar, but I ran my hand up, as well as I could, where I had heard the mouse. By holding the lantern up I discovered a sort of black hole. I thrust my hand into it, and was somewhat horrified to find that there had been a fire there at some time or other, though it was, evidently, from no fault of the rodent. This hole was directly under the grate tiling, and it was evident that the heat had been at some time so intense as to burn out the woodwork. I did not care any thing about the mouse; but I made up my mind that our comfortable grate should not run any more that winter. Although I was deeply grateful to the mouse for causing me to investigate the prem-

ises in the cellar, I set a trap and caught him, returning evil for good; so you see, doctor, if it hadn't been for the mouse I might have lost all the bees. No, sir; mice do good sometimes, even to bees."

I would say to our readers here, by way of parenthesis, that I had the grate repaired, and now Mrs. Root and I enjoy the comfort of sitting before it again evenings. Although open fire is warm and cheerful, we want it primarily for ventilation. It is well known that a grate is one of the best ventilators in the world; and our house, almost at all times, feels as fresh as a spring morning. As the grate is not sufficient to entirely heat all the rooms, we have independent heat besides. I drop this simply as a hint to some of our readers who may possibly have in mind the building of a new home or the reconstruction of an old one. If the grate is set by an experienced man there will be no trouble from fire. My first grate-setting was very poorly done; in fact, I might say, put up with criminal carelessness.

Well, to return. The doctor and I strolled about the bee-yard, talking about any thing and every thing. Our thoughts finally reverted to bee-conventions. As the air was chilly, we thought we could discuss this matter a little more comfortably in the house, before Dr. Miller's open-grate stove.

I will remark here, that, if I hadn't a grate, I would certainly have an open-grate stove. You will be surprised to see how it will freshen up the atmosphere in the house.

Well, when we had seated ourselves comfortably, I said to the doctor:

"You have a big talent in helping to liven up a bee-convention. I have been wondering for some time whether we could not employ this gift in some way in GLEANINGS. In reading your articles, doctor, our readers do not get half a glimpse of your fund of good nature. Now, I have been thinking for some time that it would be a good scheme for you to have a department of short items, where you can give some of your little spurts of fun and friendly clips once in a while."

The doctor very modestly admitted that he did have a talent in that direction, and that he would be glad to use it if we could devise some way whereby he could. To make a long story short, the upshot was that we started a department in our journal, entitled, "Stray Straws." You know the rest, and of its merits and character you are to judge.

As it was approaching the hour of train time, after an early dinner I bade adieu to Dr. Miller, and took the train for Chicago.

A VISIT TO THE OFFICE OF THE AMERICAN BEE JOURNAL.

By looking at my railway guide I found that I had a little time in the city before my western train would take me home. On arriving at the city I made direct to the business place of T. G. Newman & Son, 246 Madison St. On reaching the place I took the elevator and forthwith was ushered to the top floor; and before I was hardly aware of it I was in the presence of the editor of the *American Bee Journal*. As usual he was hard at work at his post, and so likewise was his son, Alfred H., in his department. I wonder whether anybody ever found them other than busy. And being in the heart of the city, I wonder if they are not more or less pestered by visitors. Every thing had the appearance of that clock-work regularity and system that makes the old *American Bee Journal* always on time. They have very pleasant and commodious quarters, and occupy the whole top floor of a large building. After a pleasant chat with both the Newmans, we went back to the

office, when, whom should I meet but our friend W. F. Clarke, of Guelph, Ontario, the former editor of the *American Bee Journal*? He was on his way to his home, Guelph, Ont., Can. I was obliged to make my stop shorter than I wished; and after a short visit of perhaps an hour, I took my leave.

DOES GLEANINGS UPHOLD TRUSTS, RINGS, AND MONOPOLIES?

A REPLY TO A DISSATISFIED SUBSCRIBER.

Please discontinue GLEANINGS, as I do not wish to take a journal that upholds trusts and rings and monopolies, as I see you did in GLEANINGS for Dec. 15.

ALVIN L. POTTER.

Milan, N. H., Dec. 20.

[Friend P., we will discontinue your journal, of course; but you surely do not state it fairly or truly. GLEANINGS strives to avoid uncharitable extremes; and our country is certainly suffering because of the extreme views taken by some of our people in regard to this matter of labor and capital. The Bee-keepers' Union, which has been such a protection to more than one of us, might be called by a certain class a "trust." It is a combination of bee-keepers to maintain our rights, and to protect us from spite or prejudice. Where men of wealth combine together to wrest from any class of people their *just* rights, GLEANINGS would by no means uphold them; but when the laboring classes make grievous mistakes in rushing to the hasty conclusion that some of their best friends are enemies in disguise, GLEANINGS can not well do otherwise than to utter a voice of warning. One extreme is anarchy, and the other is plodding along and letting everybody who is so disposed run over you and help themselves to the fruits of your hard labor, without a protest. The farmers who sold their butter for 10 cents a pound when it was justly worth 25, are a fair illustration of this latter extreme; and small bee-keepers who take their honey to town and sell it for what anybody is pleased to offer them, also belong to this extreme. Just let me give you a point right here.

Most of the readers of GLEANINGS are acquainted with Dr. A. B. Mason. He is a man who has been largely a servant of the public. He is constantly called upon to preside over assemblies, and, in fact, to manage crowds of people when nobody else can manage them. He has wonderful ability in that line, as you well know; and yet Dr. Mason is a poor man. He makes his living by keeping bees, and by his daily toil in his business of dentistry. He is a devoted Christian, and a good man in every way. Well, at our Detroit convention somebody spoke of the piece of newspaper pleasantry that is going the rounds, to the effect that the poorest *crop* that America ever raised is her "crop" (?) of *millionaires*. Almost everybody says amen to this, and seems to think it is true. Why, I myself have often felt sad about it. Well, perhaps we ought to feel sad; but here is Dr. Mason's reply, as nearly as I can remember it. Said he, "I do not agree. I do not believe a word of it. I wish there were *ten times* more of them."

I protested by saying, "Why, Dr. Mason, I am astonished at you."

He replied, "I repeat it: I wish there were *ten times as many more of them*."

Now, I presume Dr. Mason means this: That it would be a blessing to America if there were ten times as many men with the brains and ability, judgment and wisdom, the skill and experience, to manage large enterprises so as

to make them successful. It is these large business enterprises that give our American people work. Now, a man lacking in brains, or a man lacking in *virtue*, can not, as a general rule, manage such large enterprises. An *intemperate* man may manage people and capital a little while; but it can not be for long. The man who becomes a millionaire must be a temperate man, and, to some degree, *it seems to me*, a *liberal* and *honest* man, or he can not succeed. If men become millionaires by trickery and fraud, then all good men and women ought to combine in a ring, trust, or monopoly, and fight them to the bitter end. The fighting should, however, be done in a legitimate and orderly way. We must be law-abiding citizens, and we must have faith in each other, or we shall surely jump from the frying-pan into the fire.

Now, if any reader of GLEANINGS wishes it stopped because of the above position, we will stop it with the kindest and pleasantest feelings, and we will refund all money due. It is quite likely that GLEANINGS will lean strongly toward *charity* and faith in mankind, for it does seem to me that our greatest danger lies in too little faith in each other; and this faith and love should be broad enough to reach from the *poorest* day laborer to our *richest* millionaire.]

THE RAMBLER IN WARREN.

HE ENCOUNTERS A SEVERE CASE OF BEE-FEVER;
MORE HOFFMAN FRAMES AND NO
BURR-COMBS.

Rhode Island hospitality did not end under the roof of Bro. Miller. We rambled to the thriving town of Warren, and to the residence

verity. The family supposed it would succumb to the usual remedies, and a little patience on their part. But old and tried remedies had no effect, and the fever was raging clear beyond



HARD CASE OF BEE-FEVER.

all expectations, and now had developed the alarming stage of running in instead of out. After a thorough diagnosis of the malady we traced the germs to that enthusiastic Miller over in Barrington, and promptly advised that the doctor be not allowed to cross the river. This was as promptly decided to be out of the question, as the doctor had a very strong mind



DR. MERCHANT'S APIARY BY THE BAPTIST CHURCH.

of Dr. J. M. Merchant. Mrs. Merchant desired expert counsel in relation to the doctor's malady, the bee-fever.

□ We found that the doctor had for many years been subject to feverish attacks, some longer some shorter, but none severe. For instance, the hen-fever had a very thorough run; but the usual appliances of pills, plasters, a sweat (or its equivalent, a little curtain admonition), had resulted in an effectual cure. But now the bee-fever had taken him with the utmost se-

of his own. From careful observations we should judge that the fever has yet a long time to run.

Dr. Merchant is an active physician, with a large and lucrative practice. His apiary is located in his back yard, and it has a splendid backing in the form of a Baptist church. It is in the center of the town, and is not a nuisance to his neighbors or to the church-going people. The field here will sustain only about twenty colonies, and the doctor has accordingly

a little less than that number. Like all down-east Yankees, Dr. M. is very ingenious; and every thing in the yard and in the hive is as near perfect in construction as possible. The hives and crates were of the cabinet-shop order in neatness, and many problems have been patiently worked out here. If the problem is found to be a hard one, he just thinks it out or goes over to Barrington and gets another addition to his bee-fever by thinking it out with Bro. Miller.



MR. MILLER AND DR. MERCHANT THINKING IT OUT.

The closed-end Hoffman frame is used with wide top-bars, and here we again saw the crates and honey-boards come off with not a brace-comb between. Aside from the frame, the hive was an invention of his own, and was provided with a side-opening feature, allowing the use of division-boards for contracting the brood-chamber, and allowing spaces on each side for the cork filling, which the doctor found an effective method for wintering. For summer use, the supers are provided with an extra cover, and the wintering cover is turned back against a proper support—in this case, a fence. This plan allows storifying to any extent. We find the practice here is to get one crate of sections nearly filled, then raise them and insert under a half-depth extracting-super. The photo of the hives by the church shows this plan of working very clearly.

Dr. M. was quite enthusiastic over Alley's drone-trap. Being away from home at all hours of the day, dispensing pills and powders, traps are applied to every hive liable to swarm, and thus far they have been a success in preventing the loss of valuable queens.

Dr. M.'s crate was a little different from any we ever saw, and several points about it struck the Rambler very favorably. We were in hopes to give your readers a sketch of it in connection with this ramble, and will promise to do so as soon as we receive a sample crate from headquarters.

Prof. Cushman's large exhibit from the Experiment Station gave us a desire to visit him at Kingston; and though we were cordially invited to do so, our time was limited, and we had to refuse this and several other invitations.

While in Warren the Rambler had the pleasure of visiting with the doctor the town of Swansea, Mass., and the ancient home of our ancestors. The Rambler's grandfather emigrated from Swansea to York State about 1795; and the old homestead, about 185 years old, where four generations of our ancestors had lived, was still standing. Near by was the

family burying-ground, now sadly neglected; and as we tried to decipher the moss-covered inscriptions, how forcibly the following lines came to mind!

They died—ah! they died—and we things that are now,
Who walk on the turf that lies over their brow,
Who make in their dwellings a transient abode,
Meet the changes they met on their pilgrimage road.

Tis the wink of an eye; 'tis the draught of a breath
From the blossom of health to the paleness of death;
From the gilded saloon to the bier and the shroud—
Oh! why should the spirit of mortal be proud?

RAMBLER.

FULL SHEETS OF FOUNDATION, ETC.

ARE WE USING THEM TO EXCESS? THICK TOP-BARS.

After reading a good deal about the thick (or heavy) top-bar, in which Ernest seemed to take considerable interest, and after using the light ones for some time and being bothered by their sagging down and getting frames and combs out of shape, I ordered 300 frames in the flat, ready to nail. The top-bars were to be $\frac{3}{4}$ inch thick, bottom-bars $\frac{1}{2}$ inch thick, and the ends the same as the last named; and when they were nailed together they made a frame that was strong and durable, and hard to beat, in my estimation. Such a frame, made like the above, with a full sheet of foundation well wired in, when once drawn out by the bees makes a beauty of a comb. I consider foundation indispensable to the bee-keeper; and for the last few years I have used full sheets in all of the frames that I use, both for lower hives and surplus box (or extracting-box). These are well wired in, so there is no chance for sagging; and I am fully convinced that it well repays the bee-keeper to do so every time, although it costs him considerably more just then.

I really believe there is more benefit derived financially to the bee-keeper, from the excessive use of comb foundation, than any other thing he can use about the apiary. And I must say, I have not been so surprised in the last five or six years as I was to read what friend Hasty said in regard to foundation, page 33, where he says, "If the truth were generally known, the sale of foundation would be greatly reduced." Now, if such were the case (although I can't see it in that light) I should be very much obliged to friend Hasty if he would explain through GLEANINGS wherein there can be less used, and at the same time be as much of a benefit, in a financial way, to the bee-keeper, as though it were used still more extensively than at the present time. By using whole sheets of foundation the apiarist can control his brood-rearing mostly to his own liking (for there are not many of us who make it our business to raise drones), at the same time running for extracted honey. I would ask you all, What is there more perplexing to the bee-keeper, when he is running exclusively for extracted honey, than to now and then find combs filled with brood in the surplus boxes, where he expected them to be filled with honey? Now, if they are drone combs, the space so filled is worse than a dead loss. But, on the other hand, if all are worker combs so filled, they can be taken to some weaker swarm and put in their hive, and strengthened.

Some time ago, before I purchased some of A. I. Root's queen-excluding zinc that I used to keep the queen from going up in the upper story, I made some fine swarms artificially by having all worker combs in this way: My hive and surplus box hold 8 frames each; and when

I found in the surplus box from four to six combs well filled with brood I would set it off and remove the old hive to a new stand; then I would take a new hive (empty of course), and transfer the eight frames from the surplus box into it, and place it on the old stand, not caring which one retained the queen, for one *had* to be queenless.

There are very many more good points in favor of the excessive use of comb foundation; and it is a subject that is often brought up at our conventions, and fully discussed, and I for one have yet the first time to hear any one claim that we can get along just as well without it.

BENJ. E. RICE.

Boscobel, Wis., Jan. 6.

BEE-KEEPING IN TUNIS.

ANOTHER LETTER FROM P. H. BALDENSPERGER.

When I first landed in Tunis I had to put aside the impression which I had always had in regard to "Afric's sunny fountains," for I had to put on every warm bit of clothing. It is true, it was the beginning of November; still, about the same time in Palestine we are generally suffering for want of rain, which was the case this year again, while in the North of Africa, Tunis and Algeria have had a great deal too much.

Owing to the want of vegetation in the immediate vicinity of Tunis (town), very few bees are kept. I have seen only a few flying about the sweetmeats one finds in all Oriental towns, put before the public on large trays, in front of the shops. Always accustomed to see the yellow Easterns, the sight of those black ones excite my curiosity. I had been told to look for bees on the other side of the gulf of Tunis. A small sailing vessel took me over in a couple of hours. On the point of the cape, and commanding the entrance, covered by divers destructions, lies the once mighty rival of Rome, so thoroughly destroyed. Seldom did ruins affect me so mightily as those of Carthage. Though in Palestine ruins abound, yet this ruler of the Mediterranean makes you feel that we are all but dust. The archbishops of Algiers and Carthage have built a beautiful cathedral on the ruin; and from the ruins in the excavations, beautiful marble statues and columns have been brought to daylight, showing the art of this ancient place. Thousands of olive-trees on the surrounding mountains make the scenery more beautiful.

The Tunisians keep numbers of bees out in the country, and they themselves also consume a good deal of honey, as the Mohammedans do not use any alcohol nor any preserved fruits in tins. They are fond of dark honey, and do not take very much to white or light-colored honey.

All over Algiers and Tunis the bees are kept in hives made of wickerwork, where willows, pomegranates, and such trees abound. The hives are long and square, made out of fennel-stems where those abound. These fennel-stems are about ten inches long, fastened together by passing a stick the whole length of the stems, placed sidewise together, and thus the four sides are again fastened together, the hive being about 3 feet long. They place them on a log of wood to keep them from the immediate dampness of the soil. The hives are smeared over with manure and sand, only one row at a time being placed beside another. The hives are again covered with straw, to keep them from the heat and the rain. The next row is placed in front, a few feet apart. They have generally one or two swarms from a good hive in April and May, and they take out the first honey

chiefly from wild clover, etc. Later on, in favorable places they have a second crop of carob, thyme, and other aromatic plants. In some regions the rosemary abounds. There are also orange-groves; but up to this time they know nothing about orange-blossom honey, as the greater part of the apiarists are Arabs, going on in their primitive fashion. In Algeria they seldom or never move their hives expressly for pasture; but as the country people are all nomads they now and then are obliged to move the hives with the general move of the tribe.

The North African bee is about the same in color as the Maltese—black, with yellow fuzz. They seem to be a good honey-gathering bee, very prolific, and less inclined to sting than the Eastern bees. They are great robbers, but, as a rule, are not so active as the Easterns in attacking, and defending themselves and hives both against men and bees. We were transferring some hives a few days ago from a box hive into the bar frame; but no sooner had the bees smelled the honey than on they came, rushing, robbing away, and beginning to sting a little bit too. We could transfer only two hives at a time. The Palestines, though fierce robbers, would have left us in peace for at least four or five hives, but would have then been very ugly toward us too. The queens of this black race are not so easily found as our Easterns, as they differ much less in color. This queen is dark brown, and at this time of the year a good deal smaller than she is in spring when she is laying away with all her might.

Like all the Eastern nations they know very little about queens, drones, and workers. They believe that the bees gather the eggs from the flowers to produce young bees; or, again, that the queen is simply reigning and giving orders while the workers are really the mothers. They have a great veneration for bees, as the Koran tells them they are holy animals. On this belief a certain tradition is current among the Algerians. A young barbarian, Joussef Bent-Taschefin, succeeded, in 1036, to the throne of the last fatimite khalif of the Maghreb Abu Bekr. This Joussef was the founder of the Almoravides (European corruption of the word *Almorabith*—the priests—now corrupted into French as Marabout.) The father of Joussef was a potter, and was wandering about in the gorges of the Atlas Mountains to sell his wares. His wife followed him everywhere, carrying Joussef on her shoulder, as is the custom. A swarm of bees settled on the head of the boy. Astonished at this, the parents set to counting the bees, and found a hundred. They immediately knew it was some extraordinary event, and asked a divine (*talebu*) of great renown. The divine now explained to them that the will of God very clearly manifested itself, and that this child would become great, and reign from the Occident to the Levant; that he would have a glorious and long reign, and that each bee represented a people, and the swarm the whole of the nations united into one under his hand to form one large empire. He became lieutenant of Abu Bekr, who confided to him the command of the *Lamptunes*, a mighty tribe. Joussef took Fez and Mequinaz, the khalifat of the Edrissites, at the head of 80,000 horsemen, then marched toward Themcen, and subdued all to Beni-Mezegrena, in Algeria. After his return he founded Marakesh (Morocco), and was thus prince of Morocco and the greater part of Algeria; but, unsatisfied with this, he succeeded in subduing all the north of Africa to Egypt. He then took the title of "Prince of the Musselmans and Defender of the Religion." Arab chroniclers say he built a vast bridge from Africa to Europe across Gibraltar, and took Mohammed-ben-Abd, ruler of

Mohammedan Spain, prisoner, without one single lost battle. Joussef died at the age of a hundred years, exactly the number of bees that were counted in the swarm.

The Arabs are very fond of honey, and this is a great cause why Algeria does not export a great deal. Here, also, they have manure to make the hives. The only time they visit the bees is to take out the honey, which they put in earthenware trays, and then press out the honey, simply by forming a ball out of the honey-combs and squeezing it out as fast as possible. Comb honey is never kept for sale. Some fine comb may be had if ordered beforehand. The wax is purified and brought to the market. In the Kabyle Mountains are the Kabyles (a different race altogether from the Arabs, for they are fair, and have a different language). They are very likely descendants of the Vandals, and may even have been Christians before Mohammedanism reigned here. The women of this tribe have a cross tattooed on the forehead, some also on the cheeks or chin—an old tradition they have probably carried through for centuries. These Kabyles are a good deal more industrious than the Arabs; have divers arts, as soap-making, pottery, and others. They live in stone houses in their wild mountains. Their women are unveiled, and they have a kind of shoes or boots made of cloth, resembling very much the old Germanic warrior's or Roman's foot clothing. They move their bees, too, to better regions when they find a good place of pasturage. Their land is better cultivated than the Arabs', and they raise a good many olive and fig trees. They are as fanatic Mohammedans as the Arabs, and in 1871 they were the fiercest rioters against the French, massacring all Europeans they could get hold of till the regiments coming back from Prussian captivity immediately checked the insurrection. The punishment has been very severe, but they learned to support the easy French yoke, and are even glad to call themselves French as soon as they are away from home.

PH. J. BALDENSPERGER.

Algiers, Africa, Dec. 18.

[Friend B., your legend about the little swarm of bees (just 100) reminds me vividly of my early days in queen-rearing. I had a great number of little hives with three or four combs three or four inches square. Well, when these little nuclei got their hives full they would swarm out; and swarms of bees, about as large as a goose-egg, got to be such a common occurrence during the height of the honey-yield that they were the sport of the neighborhood; and a queen with perhaps a hundred bees was likely to alight almost anywhere or on almost anybody, so that it is quite likely that so much of the legend was absolutely true.]

KEGS INSTEAD OF SQUARE CANS.

WHY A COMMISSION HOUSE PREFERENCES THE FORMER.

We note the discussion regarding the 60-lb. can, and the use of the same for extracted honey. As a rule, they are used exclusively in California; and all the honey we receive from there is put up in these cans, two cans in a case. This fact is generally known among the trade; and when they order California honey they expect to get it in these cans. For basswood, clover, and buckwheat honey, we have always advocated and advised the use of kegs holding about 150 to 200 lbs., or half-barrels holding about 300 to 350 lbs. We believe these packages are generally used in this State, Michigan,

Wisconsin, Ohio, and Illinois. We receive large quantities from these States, and have always received it in kegs or half-barrels, and sometimes in barrels, holding 500 lbs. For our market we favor the use of kegs, half-barrels, or even barrels, because these packages find ready sale, and our trade prefers them. Besides they are less expensive, and cheaper for the producer than the tins. We can not advise the use of them when there is absolutely nothing gained. Honey in kegs, half-barrels, or barrels, will sell just us readily, and at as good a price, as when packed in tins. The same may be said for Southern honey. Kegs, half-barrels, and barrels, are the packages our market demands for extracted honey, with the exception of California.

HILDRETH BROS. & SEGELKEN.
New York, Jan. 10.

[Square cans *must* be used in California because the climate there will shrink the wooden packages; in fact, kegs would be utterly useless with them. We have always advocated the tin cans for all sections of the country, but perhaps there are good reasons why kegs should be used instead in this part of the U. S. They are easier handled, and, in some cases, can be shipped on a lower classification. While square cans will not shrink they are liable to spring a leak if the boxes in which they are put are too roughly handled. Kegs are stronger, but they also take more storage room, and, worst of all, they are very apt to give the honey a slight taint of the wood, which clean tin cans never do. In fact, the principal reason why we have abandoned the use of barrels and kegs is, we have so many times had a very fine article of honey so tainted by the barrel as to make it second or third quality. We should be glad to have bee-keepers and other commission-houses give us a little more light on this subject.]

CLOSED-END AND HOFFMAN FRAMES.

A WORD ON THE OTHER SIDE.

Friend Root—As closed-ends, thick top-bars, and burr-combs seem to hold first place in the bee-journals at present, I feel it my duty to add a few words; first, because I fear some articles (written in good faith) are misleading; second, with so much testimony on one side, and little or nothing on the other, it may lead some to discard their convenient, well-proportioned frame for something they know little about. Of course, one who has had experience in bee culture will not be easily lead into changes; but the beginner, who is reading, and being guided by the teachings of the various bee-journals, often makes changes which his means will hardly allow.

I have had six years' experience with closed-end or one-half-closed-end frames (the original Hoffman frame), and have worked them nearly all out of the apiary. When I say six years, I mean I used the Hoffman frame exclusively that length of time. Exact spacing, by using a fixed distance or closed end, will work nicely so long as we take pains to have each frame in its original place and position. But we want our frames all interchangeable; and when we can get every comb perfectly straight and true, then we can use closed ends and be well pleased with them. But in our experience, combs *will differ*. We can not keep every hive exactly level at all times, and that of necessity throws our combs a little out of true; and I find that many combs, when changed from their original position, we have to change the bee-space at the top to get the right distance in the center of the brood-nest. Now, it will often happen that our ends

are left $\frac{1}{16}$ of an inch apart, or we can't get them quite close enough. If left apart, the bees immediately fill the space with bee-glue; and after repeating this a few times, the apiarist will have to stop manipulations, and scrape bee-glue before his frames will fit and give the proper bee-space.

I have used the hanging frame, made of $\frac{1}{2}$ lumber, top, sides, and bottom; and from actual experience I am fully satisfied they are far superior to a closed end in many respects. Before discarding (four years ago) the closed ends I experimented with colonies of equal strength and working qualities; also with the two frames in the same colony; and every time the hanging frame gave the best satisfaction. There are many reasons I might write why I favor the hanging frames, small in themselves; but bee-keeping is made up of small things; and he who overlooks the small things will come far short of being successful in this world, whether it be bee-keeping or other business matters.

In regard to burr-combs, I have used both thick and thin top-bars, and can see no difference. I am of the impression that burr-combs are due largely to the race of bees, and the right bee-space above the frames. I find with me that $\frac{1}{4}$ inch, scant, is about right, and with that bee-space I should prefer a frame just heavy enough to prevent sagging, as I like to get the sections just as near the brood-nest as possible.

A. E. WOODWARD.

Grooms Corners, N. Y., Jan. 12.

[I am glad to get your testimony, friend W.—not that it proves that the closed-end or Hoffman frames are impractical for the *majority* of bee-keepers, but because it shows that there are *some* bee-keepers like yourself, who, after trying them, would discard them for the hanging frames. Bee-men can not all be induced to use the same kind of frame, by a long way; and, if my judgment is worth any thing, I should say that neither the loose hanging nor fixed-distance frame will be used exclusively. Both will be used, and have their firm adherents. But your testimony, friend W., is diametrically opposed to that of a good many bee-keepers whom I know—those who have tested both the fixed and the unfixed, and have finally decided most emphatically in favor of fixed frames. I feel pretty sure that the difficulty you speak of, about combs not being interchangeable, must be due to some fault in your manipulation. Capt. Hetherington, Mr. Elwood, and Mr. Julius Hoffman, do not experience this trouble—to say nothing of the hosts of the smaller following. While I watched Mr. Elwood manipulate his frames, he alternated them as much as you and I would the loose hanging frames; and, remember that these gentlemen own something like an aggregate of 5000 colonies. There is a great deal in getting used to a thing. Although your article above shows that you have had considerable experience with fixed distances, there is possibly some factor that does not appear on the surface, and yet nevertheless is the cause of your trouble. Perhaps Mr. Elwood will enlighten us on this point a little, later on.

In regard to thick and thin top-bars, your experience is also diametrically opposite to our own, as well as to that of a good many others who have sent in reports. It is one of the *strange* things in bee culture, why good competent bee-keepers should have experiences so different, and it is not much wonder that it does confuse beginners. Mr. A. says he has had such and such experiences with a certain device. Mr. B. has had just the opposite. But that does not prove that the article in question is valueless.

You are correct about the right bee-space. It

should be a scant quarter inch, and, by the by, this *may* explain why you say you see no difference between the thick and thin top-bars. This small bee-space, I know from experience and observation, makes a good deal of difference in the matter of burr-combs.]

E. R.

HEADS OF GRAIN FROM DIFFERENT FIELDS.

WHY THE QUEENS WERE CARRIED OUT.

I introduced two queens into hives in October. In about a month after they had been introduced I found them both in front of their respective hives, almost lifeless. They were straight and plump, but their bodies were not distended. The colonies had natural stores and granulated-sugar syrup. The queens were reared elsewhere. What could have been the trouble?

J. C. ATKINSON.

Nelsonville, O., Nov. 28.

[No one can give the reason, any more than to conjecture; but my impression is, there was a queen already in the hive when you introduced one; and if you are only a novice, friend A., I should not wonder if they were not queens at all, but simply bees with elongated bodies. I once mailed such a bee to father Langstroth, saying that I had lost my twenty-dollar queen. But I was greatly rejoiced when he wrote back that it was not a queen at all, but only the body of a distended bee. I found it outside of the hive, as you did, and warmed it up, and it came to life a little.]

SECTIONS SOLD BY THE PIECE; WIDE AND THICK TOP-BARS A SUCCESS.

I have been back East through York State and Connecticut. I have read about selling sections of honey by the piece. Now I will tell you about what I know. I sent 823 lbs. to Connecticut. I had one crate of 15 boxes, of 12 lbs. each. It was hard work to get rid of them, as they wanted about 10 lbs. to 12 sections. I did not find one man that sold honey by net weight, always by the section.

I have tried seven different kinds of brood-frames. The best I have tried is with top-bars $1\frac{1}{2}$ in. wide and $\frac{1}{4}$ inch thick. They give the best results, for there are no burr-combs between frames. I space just $1\frac{1}{8}$ inches from center to center. I will take wide and thick top-bars every time.

A. N. WHITLOCK.

Dover, Mich., Dec. 15.

WINTERING IN AN OUTER CASE A SUCCESS; A DEAD-AIR SPACE SATISFACTORY.

I never could see why burlap or cushions were better above the brood-nest than a board that the bees could seal down air-tight, or why sawdust-packed hives were better than double-walled hives with a dead-air space. I winter on summer stands, and still have five different hives for experiment. The hive I principally use is the Heddon (for want of a better) with an outer case of $\frac{1}{2}$ lumber. In these hives I rarely lose a colony (I lost one out of twenty in three years). If I should happen to loosen the cover after being glued, I use a paste to make it tight. My bees breed up fast in the spring, and are ready for business when the honey-flow comes, and I always get the best-ripened honey from those hives, selling my honey as fast as taken from the hives, in my town.

In experimenting with double-walled hives, a hive with a one-inch dead-air space all around

it is warmer inside than a hive with space packed. The same is cooler in summer. What has become of the ventilation theory? I settled this theory in a few words. Why do bees seal down the cover air-tight if they should have ventilation?

J. T. FLETCHER.

Clarion, Pa., Dec. 8.

DO DARK COMBS AFFECT THE COLOR AND
QUALITY OF THE HONEY?

The question, "Do dark combs affect injuriously the color of honey they contain?" was, I believe, answered in the negative at the Keokuk convention. I believe this answer to be correct, if the honey is allowed to remain in the combs but a short time. But if allowed to remain in such combs a few months, its color and flavor are both very perceptibly impaired.

A year ago last March I warmed up and extracted several gallons of Spanish-needle honey for a neighbor from combs that he had taken out of upper stories in the fall and stored away in his house until he could get some one to extract them, as he had no extractor. The combs were not particularly dark, yet the honey was decidedly off in flavor and color when compared with my own honey gathered on the same range, but extracted as soon as well ripened.

T. P. ANDREWS.

Farina, Ill., Dec. 20.

OUTSIDE SHOW, WITH THE INSIDE NOT IN
KEEPING.

Friend Root:—I have seen a little of the same kind of work you speak of, putting the best on the outside, or on top. You are doubtless aware that Utah has had a good reputation for the quality of *potatoes* produced, but perhaps you are *not* aware that her good name has been greatly injured by this outside-show business. Now, I will omit names; but Mr. B. being a business man, and in the shipping business, and having a reputation for square dealing, receives numerous applications for those noted potatoes. Mr. B. goes among the (honest) farmers and tells them what he wants, and will pay so much a bushel for them, sacked and loaded on the cars. Now, probably there are half a dozen men loading a couple of cars. A few of the sacks are opened in the hurry, and fine potatoes are seen on top, and very likely five of the six men have been honest, and put just as good ones all the way through; but the sixth one is the Judas; and as the sacks are loaded promiscuously, without being marked, all must bear the blame of those small and some frozen and inferior potatoes. The shipper, of course, is held responsible; and when he has trusted too much to the honesty of the producer he "gets left." Can anybody say this is right? I for one am not sorry that friend Root is starting in to let the blame fall on the shoulders where it rightfully belongs, and not on the innocent, notwithstanding it may "cut close." And I think ninety-nine out of every hundred of your ten thousand subscribers will be willing to stand by you: for when a man or woman has labored diligently for a good reputation it is not pleasant to have it tarnished by Iscariot.

I think you are right when you think each package of honey must have its producer's name on it. Although we are a brotherhood of bee-keepers, and could, and perhaps should, work more for each other's interest than we do, still, until we become a little more perfect, we shall have to look to ourselves for a good name. In fact, that same little individual self is one that we must keep watch of, for he is probably as liable to go wrong as any one.

Taylorsville, Utah, Dec. 9. HOMER BROWN.

A KIND WORD—ROAD-MAKING, ETC.

Mr. Root:—I have read with great appreciation your article under the head of "Myself and My Neighbors," in your Dec. 15th issue. In this new country I see so much shiftless management, and hear so much complaining about railroads and banks and monopolies, and big crops and low prices, and big prices and no crops, to all of which your remarks are so pat, that I feel like responding, as I once heard an earnest listener in a Methodist church. He sat close up under the pulpit; and as the minister clinched every argument he was ready with a response, as is quite usual in that denomination. Finally, as a still more profound truth was uttered, he shouted out, "A—men! true as preaching!"

Apropos of your illustration about the way road work is done, don't you think that people who work, particularly farmers, need, above every thing, to learn and act up to the old maxim, "Whatever is worth doing at all is worth doing well?" To use a current slang expression, it makes me "tired;" yes, very tired, to see the way, when a low piece of ground is to be piked, they will go into the very lowest spot and plow deep holes on each side of the road in order to get dirt out of which to make the embankment. There is an old saying, "Let well enough alone." I could never see any sense in it; but too many interpret it in this fashion—that, when a thing is done so as to answer for the time being, it is done well enough. As you say, what a vast amount of time, labor, and money is wasted by doing things over year after year! Every one seems to be striving, not to do as well as he can, but to do as *much* as he can. The other day a man came to me and asked if I knew of a farm to rent. I suggested a place, a good farm containing eighty acres. No, that wouldn't do—there wasn't land enough. Just think, of it! only himself, no boys to help him, one team of horses, and eighty acres wasn't enough. He must have one hundred and sixty acres to scurry over. Yes, indeed it does make one "tired."

HORACE N. JONES.

Clay Center, Neb., Dec. 22.

BOARDS OR QUILTS; WHICH ARE BEST TO COVER
SUPERS?

Until the present season I have always used quilts placed directly on top of the sections in the super. More and more I became dissatisfied with them, because of the great masses of propolis put between the sections and quilt. Sometimes the quilt was shoyed up enough to let the bees pass over the sections, and the whole top of the sections was smeared with glue.

This season I handled 125 colonies in two apiaries, run for comb honey only, and all in ten-frame Simplicity hives, slatted honey-board, and Miller T super. On about half the colonies we used the quilt to cover the supers. The rest we covered with board covers, just a plain $\frac{1}{8}$ board cleated on top to prevent warping.

With the super holding 28 sections we have on top 32 openings, every one of which will be lined with propolis, making 16 ft. of line propolized; but with the board we have about 12 ft. of line propolized: viz., the outline of the super, 5 lines across between row and row, and row and super, and a little at the corners of the sections, where they touch the super on the side of the super. The board being rigid, it is simply glued down; but the quilt, being flexible, is crowded up, consequently receives two to four times as much glue, and is stuck right on top of the sections, which, when scraped off, have a streaked, motley appearance, while those covered with a board will be somewhat discolored all over the top, and have just a small line of glue

on each upper corner, to knock off. The whole top of the section being slightly discolored, it looks better than the spotted one. The heat will rise to the board, and equalize much better than with quilt.

COMB HONEY SOILED BY PROPOLIS.

We seldom had less than two supers on each hive, and sometimes four and five, and had frequent occasion to interchange, putting the top super down, or else putting a new one on top of those already on. Now, those, being covered with quilts, when placed below, must have those great piles of propolis scraped off, which takes up much valuable time, and, when done, will have to be smoothed down by the bees. This extra glue that the bees smooth off must go somewhere, and much of it goes into the cappings of the honey near its location in the super. Some will think it is only travel-stains. Even if it were, we don't want so much glue tramped in our nice white combs. But careful observation, in many instances, showed great spots of this extra glue placed right on the combs.

Fort Collins, Col., Dec. 24. R. C. AIKIN.

SPRING DWINDLING—A GOOD SUGGESTION AS TO ITS CAUSE.

I have not seen the subject of spring dwindling explained as it has occurred under my observations, which are these: Once in three or four years we have a late flow of honey, mostly from aster; and the bees that should (and, under ordinary circumstances, would) live until others appeared on the stage in the spring turn out and work early and late after the weather has become so cool that one is surprised to see them out, in consequence of which many die through the winter, whether wintered in the cellar or outdoors; and when commencing work in the spring they die off like "old sheep" before others can be raised to take their places. The result, many know to their sorrow. Well, what is the remedy? I wish I knew. Feeding to keep up brood-rearing after the close of the surplus season would be all wrong when the late honey failed to come. Some stocks with young queens keep up brood-rearing late, and get through all right, when, if the late flow had not come, they would require heavy feeding sometimes, while the others would be in much the best shape.

Bartlett, O., Dec. 15. E. S. FOWLER.

[It is well known that spring dwindling does not come every spring; and as it appears irregularly, your suggestion is a good one—as good as any that have been given. Has any one else observed that a late honey-flow is apt to be followed by more or less spring dwindling?]

AN EXPERIMENT WITH HAIR FOR PACKING.

I am trying an experiment this winter with four chaff cushions filled with hair, such as is used for plastering. Our folks run a tannery, and they are troubled with bumble-bees building nests in the hair-house, and I think honey-bees will not be offended if we fill their sidewalls with good dry hair. Of course, there is some lime in it, but that will absorb some of the moisture from the hive, and become dry again without rotting, as chaff will. I will send you free samples, large enough so you can fill four side cushions. We use the Falcon chaff hives.

MRS. J. W. BRODIE.

Warsaw, N. Y., Dec. 1.

DOUBLE-WALLED AHEAD OF SINGLE-WALLED HIVES; THICK TOP-BARS A SUCCESS.

We got some honey from all of our chaff hives, but there was not a pound of surplus from the single-walled hives. We used heavy top-bars

this year, $\frac{1}{2} \times 1 \frac{1}{2}$, and there was not a spoonful of wax on the top of about 200. I like them much better than the light ones. We used the T super over them without any honey-board—put a strip under each end of the super, and there was no wax nor brace-combs to bother.

F. L. HANKINS.

Blandinsville, Ill., Dec. 8.

A GOOD REPORT FROM THE HOFFMAN FRAME.

The past season was entirely too wet to be very favorable to the bee-keepers of New Jersey. My honey crop this year is slightly over 1600 lbs., all but 150 of which is comb, from 60 colonies, spring count. Clover sold at 17cts., and buckwheat at 15—better prices than for some years past.

In speaking of the Hoffman frame, when, in 1885, I bought the apiary of my brother, John B. Case, now of Port Orange, Fla., he was using both kinds of frames, the Hoffman for experiment, with gratifying results. Now, if any one will use both styles, Hoffman and common, not only in the same yard, but in the same hive, as I have done, I think he will very soon discard all but the Hoffman. They can be handled just as rapidly as the common, and spaced in a flash. A good way to test the matter is to put, in a hive, half of each kind of frames. There are but few other kinds of frames used in this section at present, and they are imported from New York, Ohio, and other foreign parts. I should almost as soon think of going back to the old box hive as to give up the Hoffman frame.

There is a hive manufactured not more than a thousand miles from here, in which the frames are permanently spaced; i. e., nailed in fast and tight; and some declare, after using them, that they can not see much difference between a frame hive and a box hive. Strange, isn't it?

W. W. CASE.

Baptisttown, N. J., Dec. 29.

[Thanks for your very valuable testimony. Comparative tests are what we want. In only one instance that I know of was the Hoffman frame adopted and afterward discarded. In this case it was not for the hanging frames, but for a frame still more fixed—the closed-end Quinby. I feel morally certain, that, where a fair comparative test is made, like the one referred to above, the Hoffman will come out ahead in nine cases out of ten. The man who shuts his eyes to these improvements, and won't try them, is the one who will be the loser in the race, in the long run.]

E. R.

WHY L. FRAMES ARE PUT LENGTHWISE OF THE HIVE.

Friend Root:—Why do you and most of the bee-men, so to speak, advise the frames being hung lengthwise instead of across the hive? I ask for information. It can't be so warm in winter, and I should think they would be more difficult to handle.

C. H. PEABODY.

Providence, R. I., Dec. 18.

[This matter has been pretty thoroughly discussed in times past, friend P. The L. frame is always used running from front to rear, or pretty nearly always. Where the entrance is the whole length of the front, a bee coming in from the field can go between any two frames in the hive, without passing over any. In very hot weather, the air coming in at the entrance can also go between all of the combs. In handling the combs, the operator naturally stands at one side or the other of the hive, and never in front, so as to cut off bees from getting in any of the entrances. If we wish to divide the hive

by a division-board, so as to make two or more colonies for queen-rearing, the entrance is readily divided, without the necessity of cutting new entrances in any of the hives. Other reasons may, perhaps, be given. Very likely there are other reasons besides the one you mention for having the frames go crosswise.]

OBJECTIONS TO BENT-POINT WIRE NAILS FOR WIRING.

Last season I tried the wire nails in wiring brood-frames. I don't like the plan of bending the points, as they do not make a neat job, and it takes considerable time also. I have a plan that seems good if we can get the nails made that way. It is, one-inch wire nails with eyes punched through about $\frac{1}{4}$ or $\frac{3}{8}$ inch back from the points. Iron wire nails would do, or nails somewhat flat; or, how would nails with beards cut a little way back from the point do? What would the first-named cost per lb?

Nye, Ind., Dec. 29.

C. A. BUNCH.

[Friend B., the only way to get a nail with an eye in it would be to get up the machinery and make them. The nail companies would not take it unless an immense order were given them. There is no nail in the market with a barb long enough to catch the wire securely. A barb would be much handier than an eye, for the wire could be hooked over it. I am inclined to think that hooking over the point would be the cheapest way at present. If you use a very slender nail, and have the right kind of round-nose pliers, it need not take very much time.]

CLOSE SPACING A DECIDED ADVANTAGE.

I have read Mr. Boardman's suggestions in December 1st GLEANINGS. Our hives are the same kind as those used by Mr. B. Three years ago next spring I put an extra frame in the few hives we then had, and have continued to do so. Our bees have done splendidly, wintered well, and we are scarcely troubled with burr-combs. I think Mr. B. will find the extra frame quite a help to him. We had a good yield of surplus honey the past season, and the hives were very heavy when we put them in the cellar for winter, about Dec. 1st.

JAPANESE BUCKWHEAT—50 BUSHELS PER ACRE.

In regard to Japanese buckwheat, here the past season it has shown its superiority over the old black variety. While many pieces of the black were badly blasted by three or four hot windy days, the Japanese was scarcely affected at all. We had fifty bushels to the acre. Several of our neighbors who came to look at it said it was the nicest piece they ever saw.

B. T. SCOTHAN.

Rogersville, Mich., Dec. 24.

[These are the kind of facts we like to get. Close spacing has only to be carefully tried to prove its advantages.]

THE MODIFIED HOFFMAN FRAME—A GOOD REPORT OF IT.

I acted at once on Ernest's suggestion (page 780), and changed the hanging frames of one hive into Hoffman frames. It did not seem to work right. I could not lift even two frames at once, so I pulled the spacers off and cut the top ends square, as on page 425; nailed them on, and they did better. I can lift three or four frames easily, and they work nicely so far. I also found there has to be a spacer nailed in one corner of the hive, and one on one corner of the follower.

My bees have done well this fall, and are in good fix for winter. The spruce pine has been

in bloom over a month, and the bees are working on it every day. They are bringing great loads of pollen and some honey. I know they get pollen from the pine bloom; but do they get the honey from it too?

J. H. HILL.

Venice, Manatee Co., Fla., Dec. 27.

[If you like extemporized Hoffman frames—that is, those made from common frames, you certainly will like the Hoffman made exactly as the inventor recommends. The regular Hoffmans are easier and more satisfactory than something fixed over.]

WHAT FRAME TO ADOPT—THE VAN DEUSEN OR HOFFMAN.

I have decided to adopt a fixed frame, and can not decide between the Van Deusen reversible and Hoffman. I suppose you have thoroughly tested both by this time, and I should like to know your preference. I think I should prefer the Hoffman if it were reversible. Do you think this much advantage, or enough to adopt the Van Deusen in preference to the Hoffman, regardless of cost?

C. E. LAYMAN.

Trouville, Va., Dec. 11.

[Both frames have their points of advantage. For a fixed frame we prefer the Hoffman. If you want the reversing feature this will not do, and you had better select the Van Deusen. The safer way is to try a few of each.]

JAPANESE BUCKWHEAT TOO LARGE TO GO THROUGH ORDINARY SIEVES.

What will you give for 30 bushels of Japanese buckwheat? The miller here thinks he can not well grind it, on account of its size.

MISS LIBBIE WILLIAMS.

Delavan, Wis., Dec. 24.

[The above and similar letters indicate unmistakably that the Japanese buckwheat is larger than the common. Tell your miller, that, if he wants to be up with the times, he should get a sieve that would accommodate the new buckwheat.]

HONEY LIKE WET SUGAR.

Our bees in this settlement this fall made honey like wet sugar. What is the cause? It never was so before. We have had the driest summer and fall we ever had.

Aumsville, Or., Dec. 12. W. W. BROOKS.

[Friend B., such honey has been several times reported, and it almost always comes during a dry season or fall. We have had several reports from candied honey-dew from your locality—the kind that makes little balls of candy on the twigs of the fir-trees. As this candies on the trees, it would be nothing strange to see it candied in the combs.]

SPANISH NEEDLE.

I was visiting in Iowa during August and September, and I saw the large flowering Spanish needle for the first time. It is different from what we have here. Some of the flowers are two inches across the petals, and of a beautiful yellow color. I saw the bees at work on them. They are a different kind from what we have in Ohio.

W. S. IMLAY.

Zanesville, O., Dec. 8.

[Friend L., we are glad of what you tell us. One of the first things for bee-keepers to do during this coming season is to work up this great field along the Illinois and Mississippi Rivers.]

SUCCESS BY THE A B C OF BEE CULTURE.

I must tell you how well I succeeded with my bees with the help of your A B C book. Last fall I bought three ordinary hives, and did not know a queen from a drone. I studied the A B C all winter and this summer. I increased my bees to 16 good hives, and extracted 40 lbs. of honey, besides learning a great deal that I wouldn't take money for. I have bought enough to increase my number to 30 hives, and expect to do wonders next year in the bee-business. We have thousands of acres of alfalfa for pasturage; and although we live at an altitude of 7500 feet, our bees flourish.

Mancos, Colo., Nov. 10. Mrs. A. J. BARBER.

THE NEW DOVETAILED HIVE WITH A FOLLOWER AND CLOSED-END FRAMES JUST THE THING FOR OREGON.

In the Dovetailed hive you have struck a keynote in adding the "follower and wedge," to key up the frames and sections. This keyboard (as I have called it) and wedge have been in use in my apiary for ten years, and are considered indispensable. I have used a section-holder during this time, made by nailing these same "inset slats" to $\frac{1}{4} \times \frac{1}{2}$ -inch strips, the same resting on tins as in the dovetailed super, but without the end pieces. This gives a vacant space of an inch or so at one end, which gives easy room for handling sections, and the follower holds all snug.

The Dovetailed hive, if wide enough to admit of, say, a half-inch division-board on each side, with closed-end frames, virtually making a double-walled hive, is just the hive for our Oregon and Washington climate, where it is never extremely cold, but where we have dampness to contend with. The heat from the bees will drive the moisture through this half-inch wall to the open-air space, where it will condense and run down out of the hive, leaving the bees dry—a most favorable condition for wintering successfully.

E. S. BROOKS.

Silverton, Ore., Jan. 13.

FAIR RENTAL FOR AN OUT-APIARY.

As I have more bees than I think I should keep at home, I intend starting an out-apriary this season; and having had no experience myself, and as there is no one here to consult, I write to ask you what is customary or right compensation to pay the parties owning location, as rent, etc., for privilege. In other words, what arrangement is usual between the bee-keeper and the owner of the land?

Florence, Kan., Jan. 5. T. J. CONRY.

[Rental for grounds on which out-apriaries stand is usually rated at \$10.00 per year. It is just as you can agree. A good many pay no rent: they make gifts of honey.]

MORE ABOUT THE NEW IDEA.

Friend Root:—I see, by the way you headed my article on page 25, that my New Idea was not well understood by you. It is not a wire-cloth cage in front of the hive, for wire is hard for bees to fly against—also a conductor of caloric, therefore not good, besides too expensive and cumbersome; neither is it mosquito-bar, as might be inferred, as the feet of the bees will entangle in it.

My bees are doing grandly under this treatment, and are less restless than those in the dark cellar. Among those placed upstairs, under protection of the new idea, was a colony, robbed on the last of September. I feed them in the New Idea, and every two or three days they have a grand festival and carry some stores into the hive. They well know where to

find their rations; but it is wonderful how they assemble to enjoy their festivities.

During the month and twenty days that I have had these colonies upstairs, the dwindle is next to nothing, while those in the cellar can be gathered up by the quart. From present indications I am confident that the New Idea solves the enigma of wintering without loss; and if success attends until they reach the summer stand, upstairs will supplant down cellar, universally, in less than one decade.

The character of this device is a riddle not easy to guess, and I retain the knowledge to myself until success attends it, at which time I will send you a sample one, whereby the fraternity will be made to wonder at its simplicity.

Nirvana, Mich., Jan. 19. F. D. LACY.

AGAINST INCORPORATING THE BEE-KEEPERS' UNION WITH THE N. A. B. K. A.

On page 894, Dec. 15, Dr. Miller makes a proposition to merge the N. A. B. K. A. into the Bee-keepers' Union. I think that should not be done without the consent of a majority of the members of the Union; and as a member I wish to hand in "no" to the plan. I do not see where it would benefit the Union in any way, so I object to it.

E. D. HOWELL.

New Hampton, N. Y., Dec. 15.

REPORT OF THE YEAR.

In the spring of 1889 we set out 80 stands of bees. During the year we increased the number to 200, which were all alive in the spring of 1890, but some of them were weak. There were 185 when the fruit-trees blossomed, and we were highly pleased with the prospect for the last year. We received over 7000 lbs. of honey from 80 swarms. For 1890 we received only about 700 lbs., and have only about 175 stands left.

R. H. RANDALL.

Big Rock, Iowa, Dec. 20.

CALIFORNIA HONEY IN OLD OIL-CANS.

The honey is very rich, but I don't like it in oil-cans, for it spoils the flavor, for it tastes so strongly of the oil. I would rather pay a cent a pound more to have it in new cans.

FREDERICK HUND.

Casco, St. Clair Co., Mich., Nov. 30.

150 LBS. OF HONEY FROM THE BEST COLONY.

My bees have done fairly well this summer, my best colony giving 150 lbs. extracted honey. I had 12 colonies, spring count; increased to 22; sold one, and took 400 lbs. comb and 400 lbs. extracted honey from them, and left plenty for winter stores.

A. E. SNELGROVE.

Camborne, Ont., Can., Dec. 13.

ALFALFA-ROOTS—HOW DEEP DO THEY GO?

On page 401, A B C, you intimate that the cut of the alfalfa-root is probably exaggerated. From an extended visit to Kern Co., Cal., this season, I can testify that the statement, that the roots reach a depth of 20 feet, is correct; and for feed for stock, it has no equal.

Maroa, Ill., Dec. 4.

F. D. LOWE.

A REMEDY FOR BLACK ANTS.

My hives were covered with ants, and now I don't see them at all. The bottoms of my chaff hives are painted with coal tar. It cost 10 cents a gallon. One quart warmed and spread on quite thick, with a brush-broom, will paint the bottoms of 10 hives. The mice do not trouble them either. It is cheaper than tarred paper; besides, it preserves the wood.

R. A. TOBEY.

Caton, N. Y., Jan. 6.

OUR QUESTION-BOX,

With Replies from our best Authorities on Bees.

QUESTION 177. 1. When a cellar gets too cold, is artificial heat, such as that from a stove in the cellar, injurious? 2. If you think it advisable to use a stove, would you try to keep a steady heat, or warm up by spells?

Warm up by spells.

Illinois. N. W. C.

MRS. L. HARRISON.

I will let the cellar men answer this.

Wisconsin. S. W.

E. FRANCE.

1. No. 2. Bring the temperature up to 40, or about, and then close the cellar and try to keep it at that.

Illinois. N. W.

DADANT & SON.

1. Not if you are careful. 2. A steady heat, with facilities for turning it off in warm spells, would probably be best.

New York. C.

P. H. ELWOOD.

1. I think that artificial heat may be used to advantage. 2. Warm up by spells, and then let the bees become quiet.

Ohio. N. W.

H. R. BOARDMAN.

It is claimed by some, I believe, that the temperature of a bee-cellar should be between 45 and 50. The steadier your temperature, the better.

Ohio. S. W.

C. F. MUTH.

1. No, but I'd try hard not to have it get too cold. 2. I would keep an even temperature; and a cellar that is fit to winter bees in may easily be kept warm enough with an oil-stove.

Ohio. N. W.

A. B. MASON.

1. No. At least, it won't do as much harm as too much cold. 2. I don't know. I suspect it doesn't make much difference. If you could keep them just right, the steady is probably better. The occasional is easier.

Illinois. N.

C. C. MILLER.

1. The temperature in a cellar should be maintained at 45°, as nearly as possible. I should prefer a good oil-lamp, rather than a stove, to warm the cellar, by coloring the chimney with smoke, or using a tin chimney, in order to exclude the light. 2. Keep up the heat, a steady heat.

Vermont. N. W.

A. E. MANUM.

Not if very carefully managed; but great caution is imperative. I should prefer a uniform heat, so as to keep the cellar just about right; but I have no hesitation, as the temperature goes down toward freezing, in putting in a fire; but I carefully watch, and remove as soon as the temperature gets to 45°, or even up to 50°, if the weather is very cold.

Michigan. C.

A. J. COOK.

From my practice I can readily answer that stove heat is not injurious; and the best way to do is to warm up by spells, unless you have a very large cellar, say under a building as large as a store. I divided my cellar with a board partition, putting the bees in the big part and the stove in the small one. The stove heat radiates through the board partition after making the little room and stone wall around it very hot. In this way I avoid excessive immediate heating of the bees.

Michigan. S. W.

JAMES HEDDON.

My bee-cave needs no artificial heat. If I had a cellar which was too cold I would experiment with artificial heat to see if I could better it thereby. So much depends on the man, and his thorough or shiftless ways, that what might be a success with one might prove only a failure with others.

New York. C.

G. M. DOOLITTLE.

1. While I have never tried warming a bee-cellar by artificial heat, I feel very sure it would do no harm, provided proper care were taken not to excite the bees by too much noise or light in caring for the fire; or if a smoking stove or an uneven temperature were guarded against. 1. By all means keep a steady, uniform heat when heat is needed.

Illinois. N. C.

J. A. GREEN.

If a cellar had the habit of getting down to the freezing-point, I would first try to remedy the defect in the cellar. If I could not do this I would partition off an ante-room, and put in a coal-stove. The ante-room, though small, would shield the bees from direct heat and light, and secure an even diffusion of heat. I would keep a steady heat during the cold term, or during zero weather. The rise and fall of temperature would cause uneasiness.

New York. E.

RAMBLER.

I have had very little experience with indoor wintering. Those who have tried it, I believe, mostly say artificial heat won't work. Not having tried it, it is easy for me to suspect it might be made to work if one would get at it just right. An uneasy owner might easily imagine his bees were suffering greatly from cold when a quiet letting-alone would bring them through all right. 2. Nothing succeeds like success; and nothing fails so miserably as failure. I suspect success could be had on either line; and failure on either line, I am pretty sure, could be had.

Ohio. N. W.

E. E. HASTY.

1. Hard to tell. It has not been satisfactory with me. The trouble is to get the heat evenly distributed and keep it so. To do this it would require something in the furnace, steam, or hot-water plan of heating, and would require more of an outlay for fixtures than one would wish to incur, and more skill and patience to tend the plant than most of us possess. 2. I have a stove in my bee-cellar, and I have found it handy to dry out moisture before putting bees in, and to heat up honey to feed or extract where some is left late in the fall. What we should aim at in the construction of cellars is to construct them so that the heat of the earth and bees will keep them warm enough without resorting to fire heat.

Wisconsin. S. W.

S. I. FREEBORN.

[I am glad to see so much of an agreement in regard to the above. In our locality—at least, as our winters have been for a good many years back—I feel certain that it does not pay to winter bees in cellars, all things considered; and if I lived where it is cold enough to warrant cellar wintering, I think I should follow friend Freeborn's concluding remark. In fact, I did it years ago, and brought them out in good condition. Now, then, comes the question, "Would they not have come out in good condition had they been left entirely alone?" I rather think they would, in the majority of cases. There are times, however, say when the bees have poor stores to winter on, when, by warming up the cellar occasionally by the aid of a stove, we get them through until they can be put out in the spring, where they would not have come through otherwise.]

MYSELF AND MY NEIGHBORS.

Your adversary the devil, as a roaring lion, walketh about, seeking whom he may devour.—I. PETER 5:8.

We read in the Holy Scriptures, that “the fool saith in his heart, there is no God;” and I believe that all mankind, as a rule, assent to this proposition. It is only the foolish, or those who are stubborn and contrary, who absolutely *deny* the existence of any overruling power; and the attitude of the leading minds of the present age, if I am correct, is toward a more general belief in God than they ever have had before in any age. I believe the tendency is greater, also, to respect and reverence the Maker of all things in a way the world has never done before. It is true, there are those who take God’s name in vain; and one is often pained to hear men of culture and learning use profane oaths. But I believe a reform is coming, and that speedily, right along in this line. Well, I have been thinking that it is not only wise to accept the Bible statement in regard to God, but that it is also wise and well for us to recognize and believe in one who “goes about as a roaring lion, seeking whom he may devour.” The world is fully aroused in regard to dangers of different kinds that threaten humanity. Societies without number array themselves against intemperance; and some who declare they do not believe in the Scriptures at all are still energetic workers in the cause. It seems to me, however, through it all we should recognize that *sin* is really the one thing to fight against. The Bible is peculiar, inasmuch as it lumps all sorts of evil and iniquity under the one term—*sin*—and plainly designates Satan himself as the *father* of sin. I believe it is a good thing to recognize Satan as *the adversary*. I believe it is a good thing to recognize at once, when some friend or neighbor has gone to the bad, that he has come under the dominion of Satan. Like the rest of you I often hear certain ones vehemently denounced for their vile conduct. Sometimes I try to check those harsh words that come forth; and I then suggest:

“My friend, are you not *sorry* for this neighbor of ours?”

“Sorry? Why, no; I am not a bit sorry for him. He did it of his own accord with his eyes open.”

“But he is under the power of Satan—he is not himself. He has been lead astray, and has yielded. While he may be greatly to blame, in considering how we may do him most good, is it not best to recognize that it is *Satan’s work*? “Satan! fiddlesticks! When one deliberately acts as he does, I do not think it is worth while to waste pity on him.”

Now, these friends who reject my way of putting it (that it is just simply Satan’s work), it seems to me are not in an attitude to do the most good; and we as *Christian people* often entertain this wrong attitude. Satan gets hold of somebody else, and leads him astray. In our indignation with the brother or sister, we let a wrong spirit get into *our* hearts, and Satan gets hold of us all if we do not look out. If he can get us to fighting intemperance or gambling, or lying and theft, he is much better satisfied than when he finds out that we recognize the *cloven hoof* in the whole matter, and denounce him as the father and author of *all sin*.

Only a few hours ago a good friend of mine, and a devoted Christian, dictated an answer to some one who showed a wrong spirit in discussing accounts. I carried the letter back to her and said:

“You know this good friend of ours who writes this letter, do you not?”

She assented.

“Well, you do not wish this answer sent to her, do you?”

“But indeed I do. It is just exactly what she *deserves*.”

“But is it the kind of answer that will do her the most good, and be most likely to get her out of the wrong position she seems to have taken?”

“No, Mr. Root,” hesitatingly, “I do not suppose it is. I *do* know that the best way in answering anybody is to strive to use such words as will do them the most good.”

An answer was then dictated in quite a different spirit.

Now, instead of blaming and censuring these neighbors of ours when they do wrong things, will it not be far better to lay at least a *part* of the blame on Satan, the author of all mischief? And if we do this, will it not be easier for us to make such a reply or take such action as will be most likely to bring them to Christ Jesus? for is it not true that our greatest work here on earth—the most important work that any of us have to do—is to get our friends and neighbors out from under the dominion and control of the evil one, and to bring them, by gentle words and mild measures, under the power of Christ Jesus, “the Lamb of God that taketh away the sin of the world?”

There is one special line of sin in which Satan is constantly at work. We seldom hear much of it, however, until it bursts on us and startles community with the suddenness of a thunderclap or an earthquake; and yet the steps that Satan takes to bring these victims to ruin and despair are very simple, and of such a nature that one might almost be excused for not thinking or even suspecting that a cloven hoof was anywhere concealed. It is a matter about which we seldom hear much said, or of which much gets into print, unless it is among the sensational news of the newspapers. It has often been said, that we, as a body of bee-keepers, are especially upright and moral in character and standing. While this is true, I feel that it were well that a danger-signal were raised aloft now and then, especially since, within a short time, two prominent brothers have fallen.* When the papers came out with the sad story of friend Betsinger, I thought best to have as little said about the matter as possible. But our silence in the matter has troubled me some ever since. It troubled me because he was a prominent official in one of our universally recognized orthodox churches. In fact, his awful crime became possible because he was a *deacon* in the church. Now, by keeping silence we give scoffers good grounds for saying *because* he was a member of the church it was hushed up. I do not believe that any thing should ever be hushed up—that is, any thing in this line—because the guilty person is a church - member. On the contrary, church-members should be made to feel and to pay the awful penalty and consequence of taking such a fearful step across the wide gulf between Christ Jesus and the evil one. If anybody thinks that, because he is a church-member, or even a member of parliament, he can overstep God’s holy command, the sooner he discovers his mistake the better; and I rejoice that the world at large decided quickly on the proper thing to do in the case of Parnell. Our friend Betsinger went to an orphan-asylum, and became constituted guardian of a poor homeless, friendless, and defenseless child, because he was a deacon in the church; and the first offense was long kept from an unsuspecting public, simply because he was a professor of religion, and he was allowed to go on and repeat a thing that fairly makes one shiver to

think of. No, all this, friends, was simply the work of the adversary. Satan, little by little, got hold of him. Perhaps he may have struggled, and I think there is no question but that he did, for months and may be years, as the poor fly fights and struggles in the spider's web. Probably no human being knew of those struggles. I have told you before, that I think it is exceedingly bad for us to try to fight evil *alone*. Go to your wife; go to your pastor; go to your best friend, and tell him that Satan is striving hard for your soul. Ask them to pray for you or with you, and just see how the scales will fall from your eyes. When an intemperate man can confide his struggles to some good Christian friend, he is, for the time being, freed from the toils of the spoiler.

The second sad case is of recent occurrence. The following from the Boston *Herald* tells the sad story from Lewiston, Me., dated Dec. 30:

The neighboring village of Mechanic Falls is excited over an alleged elopement. For years a neat sign bearing the inscription, "Home of the Honey Bee," has pointed out the entrance to a cozy cottage, which has of late been transformed into somewhat of a hornet's nest. It is the home of J. B. Mason, editor of the *Bee-Keepers' Advance*, the only paper in Maine devoted exclusively to aparian interests.

Mr. Mason is 53 years of age, and has been prominently connected with the Second Advent Church since his youth. He has four sons, two of whom are ship carpenters in South Boston, and two small boys at home; also a daughter, Mrs. Lizzie Bray, a widow who is stopping at home on a visit from Boston. Mrs. Mason is a genial woman, and their home has been a pleasant one, at least until within six months ago. Then it was that Charles H. Cotton, wife, and two small children went to board with the Mason family. From that time Mr. Cotton alleges his wife and Mr. Mason were too intimate.

About five weeks ago Mr. Mason and his wife went to Boston to visit their sons, and Cotton claims that his wife received a letter from Mason, asking her to meet him at the Boston & Maine depot in Boston. On the afternoon of Dec. 22 Mrs. Cotton took her little girl and started for South Paris, telling her husband she was going to visit her sister. Mr. Cotton, being suspicious, harnessed up his team and followed her, only to learn that she had started toward Boston on the express train.

The next afternoon, he says, Mason left Boston, and has been heard from since only by a letter post-marked White River Junction, Vt., addressed to Mrs. Mason in Boston in which he said she might have his bee business, but that he would never return until he could pay his debts. Mrs. Mason is now in Boston.

The *Bee-Keepers' Advance* has already absorbed five other bee-papers, the last one being the *Bee-Keepers' Magazine*, which was long published in New York. Notwithstanding these consolidations, the paper does not seem to have prospered very well. We have been in frequent communication with friend Mason, and have felt more or less acquainted. He, too, was a church-member, and had been from his youth. However, this does not necessarily reflect on our churches, even though the world may think it does, more or less. It indicates this: That a man may be a member of a church, and at the same time not be a Christian. He may be a professor, but not a possessor. The promise is, "He that *endureth* to the end shall be saved." In our last issue we spoke about the celestial crown that stands just over our heads, as a promised reward to those who fight the good fight and overcome all of Satan's allurements. When our poor friend decided to let go of his religion, and to bid adieu to his Savior, to desert his wife and children, to give up his standing among men, his all and every thing, he deliberately agreed to forfeit all prospect of gaining that immortal crown. There is an old hymn that reads,

Jesus, I my cross have taken,
All to leave and follow thee.

This tells us what a Christian must do to follow Christ. *All the world* and all it has to offer must be dropped and given up for Christ. The thought has been an inspiring one to many a poor soul, since old Dr. Watts gave us the hymn. It rings out like the fife and drum to the fainting soldier.

Now, just for a minute take a glimpse of the awful contrast between one who leaves all for Christ and one who gives up all, as did friend Mason, for—what? Yes, let us pause a minute. What did the adversary hold out to our poor misguided, infatuated, and crazy brother, to induce him to leave friends and home, and all thoughts of eternal life? He probably deliberated long and earnestly in regard to his bee-friends and his bee-journal. Perhaps he said within himself, more than once, "O my God! I can't do it! I *can't* do it! I *CAN'T* do it!" Perhaps he added my own little prayer, "Lord, help! Lord, help!" Some of you may ask why the Lord did not help. Alas, my friend, God has made us free agents. While life lasts we have the power of choosing. In talking a few days ago with a prominent minister, a man of large experience, we were lead to speak of a case something like the above; and he added, "Perhaps the poor man was suddenly overcome by such terrible temptation that he could not help himself."

I stopped and raised my hands in horror.

"Why, Bro. P., you are surely jesting. No man was ever yet, since the days of Adam, overtaken by a temptation that he *could not* resist. In fact, we have Bible statements to the contrary. See what Paul says:"

There hath no temptation taken you but such as is common to man; but God is faithful, who will not suffer you to be tempted above that ye are able; but will with the temptation also make a way to escape, that ye may be able to bear it.—I. COR. 10: 13.

It is possible, perhaps, that one who has given way to Satan (as an intemperate man does) again and again, may find his will power so impaired that he can not of himself resist any more. The trouble is, in this case, away back. One who prays for help, and then does not *help himself*, must expect to be lost.

It is possible that these words I am dictating may meet the eye of friend Mason, somewhere in the wide world. As the matter now stands, what is to be done? Can any thing be done? O ye of little faith, who ask such a question! While there is life something can *always* be done. What shall he do? Why, go back home and take that guilty companion back home. Undo all the evil, so far as human power can undo it, then commence a pure, honest, upright life at the foot of the cross. Satan's greatest hold is in making his victims believe there is neither help nor remedy. Just as soon as he gets one a little way into the meshes of sin, he commences making great capital of the point that there is no turning back. A boy in his teens is now in our county jail, with the penitentiary before him. He went with a lot of other boys to a neighboring town, and bought a bottle of whisky. Under the influence of the stimulant he stole his employer's horse. Before he had got away many miles, however, the effects of the liquor wore off, and he began to suffer the terrible pangs of conscience and remorse. It would have been a very simple matter to go back and confess the whole thing to his employer. Satan persuaded him that he would surely be arrested if he did. So he turned the horse loose, and went to his home, quite a few miles away, and for three or four days he suffered as no one can suffer who has not been through the same trial. Common sense should have told him that he would certainly be arrested, unless he went to his employer and con-

fessed at the very earliest moment. But he was crazy and foolish. So is every one foolish and crazy who gets into the toils of Satan. Almost every one who commits crime loses his good common sense, and insists that he can not stay at home and live it down. Although it is the blackest lie that Satan ever got up, poor humanity insists on listening to Satan and not to good common sense. Perhaps friend Mason would not be allowed to set foot again in his own home. Well, even if this be true he should make the attempt, and do the best he can to undo the mischief. It takes only a little while, comparatively, for the worst criminal to regain the confidence of the friends he has lost, and to regain the confidence of the whole world. I have sometimes thought that mankind are only too ready to forget and to forgive, and to take back every truly penitent sinner. The first requisite, however, to being thus taken back, is to own up and confess. An attempt to evade or slip out, or to make believe that the thing is not so very bad after all, does not answer. A discriminating public detects the difference between *true* penitence and make believe, with a keen and unerring judgment.

I well know, however, how *loath* those who have fallen into crime are to *believe* what I say. May God in his infinite mercy and goodness bear me out in it. May the Holy Spirit attest the truthfulness of what I say. There are no exceptions; there are no possible conditions that should prevent the prodigal from going back at once. Christ Jesus himself, the Lamb of God that taketh away the sin of the world, has left a standing invitation, and the promise of pardon. He says, "Come unto me, all ye that are bowed down by the burden of sin and crime. Come unto me, and I will give you rest. My yoke is easy, and my burden is light." Oh that the penitent sinner could know *how* light and *how* easy, compared to carrying through life those burdens that are not only a *sin* against God but a *crime* against humanity!

SPECIAL DEPARTMENT FOR A. I. ROOT, AND HIS FRIENDS WHO LOVE TO RAISE CROPS.

GARDENING FOR FEBRUARY.

I presume that many of our readers think there is not much to be done in the month of February; but where the heart is full of love for working in the soil, I tell you there can be found plenty to do. In the first place, you can do underdraining; and it is not often that the market-gardener has nothing to do in that line. Just across the street from where I am writing is an acre of ground newly purchased. It was bought with the view of putting on buildings, and for use as a lumber-yard; but the boys say they are not ready to use it yet, and may not for a year or more; therefore I am going to make garden on it—yes, even though the land cost me more than \$3000 an acre. Of course, some may say, "Why, can you make it pay to garden in land that cost so much as that?" My reply is, "How can we afford to let ground lie idle that cost so much as that?" Peter Henderson tells us of gardening close to the city of New York, where they pay more than this amount *every year for rent*. This is close to the highway, right where there is a large amount of traffic. Some beautiful beds of cabbage, tomato, and celery plants, right where crowds of people are obliged to see them, will make a better advertisement of our plants and garden-stuff than the most expensive sign—yes, or advertisement in the papers. My friend, if you wish to sell garden-stuff, remember there is no sign or advertisement equal to the stuff itself. If you put it in front of the groceries,

without care, it will be wilted in a few hours; but in neat beds, growing right by the highway, especially if you have water in abundance, as we have, you can make an advertisement that will not only be a thing of beauty and a joy for ever, but it will pay you in dollars and cents.

Well, the first thing to be done is to under-drain this piece of ground. We are putting the drains 30 inches deep, and only 20 feet apart. They are to run up and down the slope the steepest way. All the books and agricultural papers teach that the quickest way to get water off from ground is to take it straight down hill; and I guess they are right, although I have felt like objecting a good deal. I am willing that the underdrains shall go straight down hill, but the surface drains must go diagonally to the slope. The *Rural New-Yorker* recently had a series of articles, in regard to which way the furrows should run on a sidehill. I was deeply interested in those letters; and I believe the general decision was, that straight up and down the hill is not the best way for the furrows, neither is it best to have them at right angles across the slope. The furrows should have fall enough to carry off the water when there is a great excess of rain, and no more. They ought to run so as to carry the water with a very slow current off the land, when it is fully saturated. At the same time, there should be no hollows where water will stand, even for a few hours, in a low place in the furrows. If it is left this way during a very heavy rainstorm, it will be likely to break through and cut gullies across the furrows. Underdrains running at right angles, or nearly at right angles to the furrows, would be likely to take the water off unless the amount of rain were very great. I think we may learn a lesson in this matter from our friends in the far West, in the way they work for irrigation. When in California I set out a thousand strawberry-plants for my brother. I was going to set the rows up and down the slope.

"Oh, no, Ame!" said my brother Jess; "that won't do at all. The ground lies too steep. The water will run right straight down the hill, and not wet the roots of the plants at all."

As the soil was a good deal sandy and quite porous, I was inclined to think that I knew better than he did; and you ought to have seen the laugh they had at my expense, to think that a "tender-foot," who hadn't been in California two weeks, should attempt to teach them anything about irrigation. Now, their strawberry-beds, gardens, and every thing else, are so laid out that the water has just enough fall to run slowly. If the fall is not enough, it would soak into the ground before coming to the end of the furrow; if too great, the water would run off the ground and get away without soaking down to the roots of the plants. The golden mean of fall must be arranged according to the porosity of the soil. Well, in fixing our grounds so as to avoid the disastrous effect of drenching rains, we want to have our furrows run on just the same kind of plan we have them run for irrigation. Last season we had our furrows up by the windmill run straight up and down the hill. During a very heavy rain I watched how it worked. The ground had just been cultivated and worked up fine, and the rain was needed. For an hour or two it seemed to work just right; and while the water was coming down the sides of the road like a small millrace, every particle disappeared in the *freshly worked soil*, to my great satisfaction. Finally, however, the shower closed with a tremendous dash. The underdrains and the soft loose ground took it all for a while, but finally every thing was saturated and soaked, and the water commenced going down the furrows where there was a

hollow. In fifteen minutes more, dark inky streams were coming down almost every furrow, showing that the strength of the manure that had been put on so lavishly was going down to the roadside, and mingling with the torrent which was fast hastening on to Champion Brook. Not only did the dark water go down to the roadside, but several loads of my finest and richest composted soil were piled up in the ditch; so you can understand why I do not want my furrows to run straight down hill any more. With the furrows arranged so as to cross the underdrains at nearly right angles, with just a gentle slope, I believe I can avoid wash and losing the strength of my manure, unless the rain should be so excessive that the manure-water should come out at the mouth of the underdrains. Where these drains are not less than 30 inches deep, however, and a deep loose soil over them, I do not believe that the water that comes out will be colored by the manure. I am going to watch carefully, however, and see.

REDUCING THE NUMBER OF VARIETIES OF GARDEN SEEDS, ETC.

Friend Root—In GLEANINGS for Jan. 15, a person whose name is not given, but who, for convenience' sake, I will call "Seedsman," gives the other side of the question of reducing the number of vegetables in a seed list. I can agree with him in nearly all he says; but I think that he has made a mistake as to the effect of cutting down the list or varieties in a seed catalogue. While he does not say so in so many words, yet it is plain to be seen that he thinks the object in the seedsman in not reducing the number of kinds of seeds in the list is because it will reduce his sales—that is, the object of the seedsman in cataloguing a large number of varieties is to sell the greatest amount of seed and thereby put the greatest amount of money in his own pocket. I do not think that Seedsman will dispute me in this point; and if he did, a glance at the seed catalogues would convince one of the fact. Take the point of locality, which Seedsman makes a good point, and look in the catalogues and see whether you can find it mentioned; and yet he says that "seedsmen are constantly receiving reports from different parts of the country, that certain varieties do well there." But, now, Seedsman, if you'll look at GLEANINGS for Aug. 15, 1890, you will see that A. I. Root as a *buyer* and *user* of seeds sees the profit and pleasure, the economy and satisfaction, of planting and selling fewer varieties of vegetables; and then, as a seller of seed, he is trying to have his customers do the same thing, not to increase his sales of seeds, but for the benefit of the customer. This, perhaps, may seem to some a rather unbusinesslike way of doing things; but if more business were done on this plan, the world would be better; and it may, and I sincerely hope will, largely increase the sales of seeds by Mr. Root.

I can see many reasons why a catalogue can not be cut down to the extent that has been suggested, especially for the good of the seller; but for the buyer, the reduction would be a great saving.

Now, the objection that Seedsman makes to my saying that "the new kinds and sorts are mostly made by the seedsmen in order to have a novelty to introduce." I will say that I said what I meant in that, and still hold to it, and hope that during the coming season I shall have proof of my assertion, for the garden department of the Experiment Station will make special tests of varieties, and perhaps issue a bulletin on them.

But to think that Seedsman thinks that for a seedsman to send out a novelty that was an old thing, would hurt his reputation, makes me laugh. Why, bless your soul, that is the very way *some* of them take to make a reputation, taking for their motto the oft-repeated saying of Barnum, that "Americans like to be humbugged." If all of the seedsmen who have sent out a novelty that was *not* a novelty should have their reputation blasted, we should have a sorry set of seedsellers. And it sometimes happens that the introduction of an old thing for a novelty is not a bad thing, for some of our older varieties are overlooked, and are good things in their place; as, for instance, Henderson's bush lima bean, or Maule's Prize-taker onion.

E. C. GREEN.

Columbus, O.

[Friend G., the point you make, about seedsmen not saying in their catalogues what things are suitable for certain localities, is one that ought to be emphasized. We are continually testing things that may do somewhere, but they will not for us—John Lewis Childs' Pepino, or Melon pear, for instance. The picture and description are exceedingly taking, especially when he says it is as easily grown as a tomato. When he first announced it I sent 50 cents at once for a plant. I gave it the very best cultivation I knew how, but never got even a blossom. The next year I tried again; and as I got a larger plant I succeeded in getting blossoms, but not a sign of fruit. And now somebody tells us that they do not bear fruit *anywhere*, except in *Florida* or some tropical climate. Notwithstanding this, the advertisement in the catalogue reads just as it has for the past three years—"As easily grown as a tomato." Last season we had a watermelon that really "astonished the natives." It was so large I could hardly carry it, and it readily found a purchaser at a good figure. When he came to cut it, however, it was so green that it hardly had *seeds* inside, and yet it was growing the whole season, and we covered it with a carpet until after one or two frosts. It was a California watermelon, and not adapted to our season and climate. I wonder how many others have paid out money for the Melon pear. Now, in regard to bringing out old and well-known varieties under a new name: Among the catalogues before us I find seven different names for the Shoeppeg corn, and two or three different catalogues picture it and describe it as a wonderful "novelty." If the Experiment Stations will tell us just how many of the things advertised in our seed catalogues are *real* novelties, and what are old things under new names, they will save our people who love gardening, thousands of dollars. Just another point: Some new thing is so near like something well known, that nine out of ten people pronounce it exactly the same thing. Where something is brought out with a difference so very trifling from some old well-known vegetable or fruit, is it right to coax people to buy it without telling them that it is almost like the well-known so and so? The Ontario strawberry was advertised and scattered far and wide until the universal decision was that it was just our old well-known *Sharpless* under a *new name*. Our real honest and upright seedsmen not only have no objection to allowing the Experiment Stations to do this work, but many of them furnish the seeds gladly, and free of charge, and offer them to the public only after the Experiment Stations have given them their recommend. May the Lord be praised for our Experiment Stations, and for the fearless, faithful, hard-working young men who have these matters in charge.]

EDITORIAL.

I will arise and go to my father, and will say unto him, Father, I have sinned against heaven and before thee.—LUKE 15: 18.

RENEWALS are coming in fast. Thanks.

EIGHT VS. TEN FRAME HIVES.

IN the Question-box of the *American Bee Journal*, page 72, the respondents vote strongly for eight-frame hives, although a few favor the ten-frame.

SUBSCRIPTION RECEIPTS.

WE never send a receipt for money received for renewals. After you send the money, watch the little label on the wrapper of your journal; and if the date has been changed a year ahead, that means that your dollar has been received. At this time of the year, however, it sometimes takes a month or more before the dates on the labels are changed.

HOPEFUL.

OUR subscription clerk informs us that several who have written, requesting GLEANINGS to stop, have repented of doing so, and asked to have it kept going again. In fact, I have noticed quite a few such letters myself. You see, there is a delicate compliment. They began to feel lonesome, even at the *prospect* of bidding adieu to an old friend. Thank you.

PREMIUMS FOR NEW SUBSCRIBERS.

ANY subscriber who will take the pains to secure a *new* name besides his own for GLEANINGS may retain 25 cents and send us 75, providing he agrees not to take any subscriptions for less than the advertised price, \$1.00. If he obtains more than one name besides his own, a part may be renewals and part new names; but at least half of the names must be new.

LOOK OUT FOR THEM.

OUR friends Miller Bros., of Bluffton, Mo., wish us to caution bee-keepers in regard to the Indiana Paint and Roofing Co. We have written the above firm at two different times; and although they replied, they certainly do not seem disposed to make good their warrant on their roofing. And, by the way, is there any sort of roofing that is really reliable, and worthy of notice, unless they use shingles, slate, tin, or iron? I have seen so much dissatisfaction from all kinds of cement, paint, and paper roofing, that I confess I am a good deal incredulous.

DEATH OF MR. ALFRED NEIGHBOUR.

WE learn from the *British Bee Journal*, that Mr. Alfred Neighbour, of London, England, died on the 19th of last December, after an illness of considerable duration. Mr. Neighbour was a prominent bee-keeper in England, and the oldest of the appliance-makers. He wrote a bee-book, entitled *The Apiary*. It passed through several editions. The *B. B. J.* says, "He was extremely affable, and always ready to assist one in bee-keeping. His strict integrity caused him to be trusted by all who knew him."

THE DOVETAILING IN HIVES IN DEMAND.

WE have just received a letter from a correspondent in Utah, Mr. Willard Bishop, of Kaysville, Davis Co., to the effect that a dovetailed corner on hives will be a great advantage in their climate. He says that ordinary nailed joints are not strong enough to stand their climate; that the nails of an ordinary lap joint do

draw because of the drying out and warping of the boards in the sun. The dovetailed joint is not only cheaper, but there is a demand for it in several of the Western States, where the climate is such as to make the ordinary box joint insufficient.

HONEY FROM THE SANDWICH ISLANDS.

ONE of our old acquaintances, Mr. Chauncey N. Pond, of Oberlin, O., has just returned from a visit to the Sandwich Islands, and has left with us a sample of honey from that part of the world. We expected to find something dark-colored and poor in flavor, as the honey from the islands of the sea usually is. We were agreeably surprised to find, however, that it is not only of a beautiful color but of exquisite flavor. It reminds us very strongly of alfalfa, which is so popular at our house. We should be very much pleased to have one of our subscribers in the Sandwich Islands tell us more about it, and of the progress of apiculture as it is on those islands.

HOW TO WINTER BEES.

ON page 36 of our catalogue, for the benefit of beginners and others we have given the very latest there is in regard to wintering, in doors and out; how to pack in chaff on summer stands; how to carry bees into the cellar, and how to stack them up there. In fact, they are the same instructions as are given in the A B C book, boiled down. We have also given instructions on how to feed and how to do a great many other things. Our new catalogue is not only a price list and description of implements, but it contains a good deal of instruction for the benefit of bee-keepers. It will be cheerfully sent on application.

THE NUMBER OF QUEENS WE IMPORT FROM ITALY.

I SEE it is reported in one of the bee-journals that we import annually about 200 queens from Italy. If this figure were split in two it would be more nearly correct. We do not know how the mistake occurred, but perhaps through our fault in some way. In 1882 we imported 130; and during successive years our importations went down to nearly nothing while we had foul brood. In 1889 we imported 50; in 1890, 98. The fact is, one imported queen can be the mother of hundreds of daughters; and as they will live on an average about three years it does not take many queens to supply the prominent breeders, to say nothing of the importations that are made by other parties.

WHAT A VISITOR SAYS OF THE HOME OF THE HONEY-BEES.

WE have just had a very pleasant call from a couple of bee-keepers, one of them an Iowa man and the other a native of our own State. Said Mr. Firman, the gentleman from Iowa, after we had shown him about our premises, "Why, I had no idea you had such an immense plant. We get glimpses, occasionally, of some of the improvements in GLEANINGS, but there are few subscribers who realize the number and size of your buildings." This remark has been uttered so many times by visitors that we thought possibly some of our customers and other subscribers might like to get this bit of news. Our plant has been very much enlarged of late, and we are always glad to welcome our bee-friends; and while we can not always take the time to show them around, we want them to feel perfectly at home, and free to go through all the departments, and ask all the questions they wish. Our establishment is open from

half-past six in the morning till seven at night, every day in the week except Sunday, and sometimes it is open and running night and day.

OUR list of subscribers now numbers 10,054.

NEW YORK STATE BEE-KEEPERS' ASSOCIATION.

E. R. HAS just returned from a meeting of the said association, in Albany. We will try to give a report of it in our next issue. Although an off year, there was a good attendance, and the discussions were practical and to the point.

BEE-KEEPING IN DIXIE.

WE have just printed a 60-page catalogue, with tinted cover, for Jenkins & Parker (formerly J. M. Jenkins), Wetumpka, Ala. This is not only a catalogue of implements, but it is quite a little text-book besides. Over half of it is descriptive, and is especially designed for the instruction of the Southern bee-keeper. Apply to the address as above.

THE OHIO STATE BEE-KEEPERS' ASSOCIATION.

REMEMBER the time and place of the meeting of the association above—Feb. 10, 11, Toledo, at the Merchants' Hotel. It is expected that quite a number of Michigan bee-keepers will be present, and, altogether, we shall probably have one of the most profitable meetings ever held in the history of the association. The program is given elsewhere. Dr. A. B. Mason will be the presiding officer, and that bespeaks a good time, and lots of fun and profit for all who attend.

ADVERTISEMENTS THAT SAVOR OF LOTTERY SCHEMES.

WE can not accept any advertisement that gives one purchaser any advantage over another by any scheme of luck or chance. Of course, this would not include special prices to those who made their orders early before the rush of business. But we must refuse to accept any thing that even indirectly encourages a taste for getting money by chance or luck. This sort of craze gets hold of people fast enough without any encouragement on the part of respectable journals and periodicals.

TEMPERATURE FOR CELLARS.

THE temperature for our bee-cellars this winter has been in the neighborhood of 40. Last year it was from 45 to 50. The bees are in very much better condition than they were a year ago. Prof. Cook said, at the late Detroit convention, that he now prefers from 38 to 40. E. R. believes he is right. The old standard has been all along about 45. Is it not possible that we have been mistaken? Last winter I noticed that, when the cellar went down to 40, the bees were quieter. Because the books said 45, I made efforts to raise it to that point, and keep it so, as nearly as I could. Last year at this time there was about an inch of dead bees on the floor; but now there are not more than 200 or 300. After all, are bees doing well in the cellar when there is an inch or so dead ones on the floor?

GIVE YOUR POSTOFFICE.

WHEN you are renewing, be sure to sign your name and give your *postoffice* address. Every year, about this time, we receive a lot of renewals, with the mere signature, and nothing else. Most of them, with a great deal of trouble, we can hunt out on our books, and the rest have to lie until the subscriber "growls." Sometimes a subscriber will write from a postoffice other than the one to which his journal is sent. Another big hunt has to be started to find out

where his journal goes. If our friends would be a little more careful it would save us a great deal of work. We have scolded about this so much that it sounds like a mere repetition; but it is one of the things that publishers are obliged to harp about more or less all the time. Remember, our subscription list is indexed according to *postoffices*, and not according to *names*.

REDUCED RATES TO THE OHIO STATE BEE-KEEPERS' CONVENTION.

The following, from Dr. A. B. Mason, will be of interest to Ohio, Indiana, and Michigan bee-keepers:

Friend Root—Please say in next *GLEANINGS* that 1½ rate of fare has been secured for the round trip on railroads in Ohio and Indiana, to attend the Ohio State Bee-keepers' convention, to be held in Toledo, at the Merchants' Hotel, on the 10th and 11th of Feb. Rates at good hotels vary from one dollar up. In order to secure reduced rates of fare, let all buy certificates of their railroad agent, to attend the Ohio Republican League convention and banquet, and I will fix them so they will be good for one-third return fare. Tickets can be bought on the 10th, 11th, and 12th, and will be good for return up to and including the 14th. For parties coming from Michigan, the rate is two cents a mile each way, when parties of ten or more come and return together on one ticket, which must be bought as above for the Republican League convention and banquet. Write me for any further information that may be desired.

Auburndale, O., Jan. 22.

A. B. MASON.

LIFE-MEMBERSHIP IN THE N. A. B. K. A.

SINCE our last mention of the number of names that were already enrolled as life-members only one has been added. What's the matter? To make the association a power for good we need many more substantial life-members. One of our correspondents writes, that, if we "will merge the Bee-keepers' Union into the N. A. B. K. A., here is \$10.00 for life-membership." We have scarcely given this matter a thought as yet, and consequently are unable to express any opinion as to the wisdom of such a course. We rather prefer to see what the General Manager thinks. If he and the other officers approve, it might be advisable to consider it in convention at the next session of the N. A. B. K. A. in Albany, but Manager Newman should still be at the head of the present Union. The following is the list of life-members:

D. A. Jones, Beeton, Ont.
Thomas G. Newman, Chicago, Ill.
A. I. Root, Medina, O.
E. R. Root, Medina, O.
J. T. Calvert, Medina, O.
Charles Dadant, Hamilton, Ill.
C. P. Dadant, Hamilton, Ill.
Eugene Secor, Forest City, Ia.
Dr. C. C. Miller, Marengo, Ill.
O. R. Coe, Windham, N. Y.
C. F. Muth, Cincinnati, Ohio.

HOW TO GET GLEANINGS FOR LESS THAN A DOLLAR A YEAR.

A LARGE part of our subscribers are those who have been with us for years, and who, no doubt, expect to continue with us for years to come. To favor these and others who will liberally patronize us we have decided to make them this offer: We will send *GLEANINGS* for one year for \$1.00; two years for \$1.80; three years for \$2.50; five years for \$3.75: but to do this we must have cash in *advance*. If you have been so far pleased with it and the improvements it has inaugurated from time to time, you will probably wish to remain a subscriber; and the best thing for you to do, if you want to save money and do away with the bother and machinery of renewing annually, is to send \$3.75 and we will make you a subscriber for five years. If your address is right, the journal will go to you uninterruptedly for that

length of time. We propose to make this a standing offer. Any subscriber, new or old, can take advantage of it. Now, perchance you have just sent in your dollar for renewal, and you wish to take advantage of this offer. If you will send the balance *at once*, say \$2.75, we will send it four years longer; or \$1.50 two years longer; or \$0 8cts. one year longer.

RECESS AT BEE-CONVENTIONS.

WE attend conventions to hear the essays and subsequent discussions, it is said; but after a session has been held for a couple of hours, it is a great rest and pleasure to have the president announce a short recess. How pleasant it is to feel the warm grip of one whom we have long known through the printed page, and whom, for the first time, we now meet face to face! No, we do not attend conventions simply to hear the essays and discussions. We go to see, hear, and feel the personality of the good brothers and sisters who attend. Some of the most valuable ideas gleaned, oftentimes, are in the between sessions; and our presiding officers should give ample opportunity for hand-shaking, and this dual exchange of ideas.

A VISIT TO THE HOME OF THE HONEY-BEES, FROM DR. G. L. TINKER.

WE had a very pleasant call last week from our genial friend Dr. G. L. Tinker, of New Philadelphia, O. Many of our readers will remember him as the very fine workman who makes such perfect queen-excluding zinc, and such beautiful four-piece white-poplar sections. He was kind enough to give our saw-filer some hints in filing, to do smooth work rapidly—a secret he had heretofore kept to himself. He seemed to enjoy his visit very much, being agreeably surprised at the size and equipment of the Home of the Honey-bees, and many times complimented us on our work by the remark that it was much better than we used to do. He was on his way to Ashtabula to visit his brother and bring home a new zinc-perforating machine by which he would be able to make sheets of his zinc as large as 24 by 36 inches.

MORE UNCHARITABLENESS.

THIS time it comes from the Philadelphia *Cash Grocer*, of Jan. 12. This journal purports to be devoted to the best interests of retail merchants and country storekeepers: but I do not see how their best interests are subserved by statements like the following:

"The profit in teas is simply great. The tea sold by retail tea-dealers at 60 cents costs them 18 cents a pound; and other teas sold at 50 and 55 cents per pound cost 20 cents. There is big money in the tea business, if the trade can be had."

And here is another:

"The explanation of the great amount of maple syrup and honey in the market is found in the enormous product of the glucose factories, amounting to a million pounds per day. There are not trees and bees enough to produce the syrup and honey in the hands of the trade."

I wonder whether the *Grocer* folks judge other people by themselves when they say that the retail dealers charge 60 cents for what costs them only 18, and a staple article besides. They should be ashamed of themselves. In regard to honey and maple syrup, there may be some adulteration; but the statement that there are not trees and bees enough is not true. Perhaps it will astonish them somewhat to know that there are bee-keepers nowadays who raise honey by the carload; and I imagine that there are maple-trees enough too. If there is

really any adulteration in syrup going on, as well as in honey, which is to some extent true, why not say so in moderate terms, and then let us all join and fight it, without flings like the above, against large classes of honest tradesmen?

HOW TO MAKE THE GARDEN PAY.

THIS is the title of a bright new book just published by Wm. Henry Maule, written by T. Greiner, author of the new onion-book, mentioned just below. This is certainly the ablest book, clear up to the present time, before the world. The description and comparison of the variety of methods of gardening under glass, commencing with cold-frames, then taking up cold-forcing-houses, next forcing-houses with steam-pipes or flues, and finally discussing the respective merits of steam and hot water, is worth to me a ten-dollar bill, to say nothing about the rest of the book. The engravings are beautiful; the print is second to none; and, best of all, the author is a practical gardener—one who loves the dirt, especially when it is enriched up to its highest capacity, and who evidently loves every tool used in the garden. He is not only conversant with all the new seeds, plants, and fertilizers, but he evidently has read up almost every thing written in the agricultural papers on the subject of market-gardening. The book is 6 inches wide, 10 inches long, $\frac{3}{4}$ inch thick, and contains 272 pages, and even so many pictures. I have not had time to count them yet. If you have any notion of building a greenhouse, either for flowers or vegetables, or even if you want to make a hot-bed or cold-frame, it will pay you to have the book. We can furnish it postpaid for \$2.00; or you can have it with *GLEANINGS* for \$2.50 for the two.

THE NEW ONION CULTURE.

THIS is the title of another good book by our good friend T. Greiner, better known through the agricultural papers as "Joseph." It gives almost exactly the plan of raising onions described in our last issue. The book is finely illustrated, and is written in one of Joseph's happiest veins. In fact, the story is so taking that almost anybody might read it from beginning to end without a thought of being weary: and to one who loves gardening it is a gem among books. The only fault or criticism any one could make is, I think, that there is not enough of it, especially for the price, 50 cents. There are only 62 pages in the book: the type is large, and the work very open. The paper, however, is heavy and fine, and the print beautiful. If bound in cloth instead of paper covers, the price would not be an objection. The author admits that the price may seem high, but he thinks the discovery or secret really cheap at the price. This latter is true; but we should remember that the whole thing is given in our Ohio Experiment Station Bulletin for October, 1890. The Bulletin, however, does not go into the minutiae in regard to every point of the work that the book does. We can furnish the book postpaid for 50 cents. If wanted by freight or express with other goods, 5 cents less. Or we will club it with *GLEANINGS* for \$1.40. The Bulletin is furnished free of charge to all Ohio people; and I presume it will be furnished to those outside of this State for a very small sum. I think it will pay many times the cost for every one who sows a paper of onion seed, to use these helps. Joseph recommends that we start with an ounce of onion seed; and you may make enough on this single ounce to pay the cost of the book *fifty times over*. This seems like pretty strong language; but those who have tried starting large onions under glass will, I think, bear me out.

Illustrated HOME JOURNAL

30 Quarto pages—50 cents a year.

A N Elegant Monthly for the **FAMILY** and **A FIRESIDE**. Printed in the highest style of the art, and embellished with magnificent Engravings. Sample FREE. Agents Wanted.

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PUBLISHERS

246 East Madison St., - CHICAGO, ILL.

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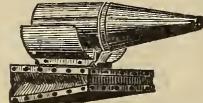
DR. TINKER'S SPECIALTIES!

The Nonpareil Bee-hive and Winter case, White Poplar Sections, Wood-zinc Queen-Excluders, and the finest and best Perforated Zinc now made.

Send for catalogue of prices, and inclose 25 cts. for the new book, **Bee-keeping for Profit.**

Address DR. G. L. TINKER,
21tfdb New Philadelphia, O.

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ELEVEN YEARS
WITHOUT A
PARALLEL, AND
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ARD IN EVERY
CIVILIZED
COUNTRY.

Bingham & Hetherington
Patent Uncapping-Knife,

Standard Size.

Bingham's Patent Smokers,

Six Sizes and Prices.

Doctor Smoker,	3 1/2 in., postpaid	... \$2.00
Conqueror "	3 "	1.75
Large "	2 1/2 "	1.50
Extra (wide shield) "	2 "	1.25
Plain (narrow) "	2 "	1.00
Little Wonder, 1 1/2 "	"	65
Uncapping Knife.....	"	1.15

Sent promptly on receipt of price. To sell again, send for dozen and half-dozen rates.

Milledgeville, Ill., March 8, 1890.

SIRS:—Smokers received to-day, and count correctly. Am ready for orders. If others feel as I do your trade will boom. Truly, F. A. SNELL.

Vermillion, S. Dak., Feb. 17, 1890.

SIRS:—I consider your smokers the best made for any purpose. I have had 15 years' experience with 300 or 400 swarms of bees, and know whereof I speak. Very truly, R. A. MORGAN.

Sarahsville, Ohio, March 12, 1890.

SIRS:—The smoker I have has done good service since 1883. Yours truly, DANIEL BROTHERS.

Send for descriptive circular and testimonials to 1tfdb BINGHAM & HETHERINGTON, Abronia, Mich.

 In responding to this advertisement mention GLEANINGS.

SECTIONS! SECTIONS! SECTIONS!

On and after Feb. 1, 1890, we will sell our No. 1 V-groove sections, in lots of 500, as follows: Less than 200, \$3.50 per 1000; 2000 to 5000, \$3.00 per 1000. Write for special prices on larger quantities. No. 2 sections at \$2.00 per 1000. Send for price list on hives, foundation, cases, etc.

J. STAUFFER & SONS,
Successors to B. J. Miller & Co.,
Nappanee, Ind.

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CLEVELAND, OHIO.
SEND FOR CATALOGUE.

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Is kept for sale by Messrs. T. G. Newman & Son, Chicago, Ill.; C. F. Muth, Cincinnati, O.; Jas. Heddon, Dowagiac, Mich.; O. G. Collier, Fairbury, Neb.; G. L. Tinker, New Philadelphia, O. E. Ketchmer, Red Oak, Ia.; P. L. Viallon, Bayou Goula, La., Jos. Nysewander, Des Moines, Ia.; C. H. Green, Waukesha, Wis.; G. B. Lewis & Co., Watertown, Wisconsin; J. Mattoon, Atwater, Ohio, Oliver Foster, Mt. Vernon, Iowa; C. Hertel, Freeburg, Illinois; Geo. E. Hilton, Fremont, Mich.; J. M. Clark & Co., 1517 Blake St., Denver, Colo.; Goodell & Woodworth Mfg. Co., Rock Falls, Ill.; E. L. Goold & Co., Brantford, Ont.; Can.; R. H. Schmidt & Co., New London, Wis.; J. Stauffer & Sons, Nappanee, Ind.; Berlin Fruit-Box Co., Berlin Heights, O.; E. R. Newcomb, Pleasant Valley, N. Y.; L. Hanssen, Davenport, Ia.; C. Theilman, Theilmant, Minn.; G. K. Hubbard, Fort Wayne, Ind.; T. H. Strickler, Solomon City, Kan.; E. C. Eaglesfield, Berlin, Wis., Walter S. Poulder, Indianapolis, Ind.; E. T. Abbott, St. Joseph Mo.; I. D. Lewis & Son, Hiawatha, Kan., and numerous other dealers.

LANGSTROTH on the HONEY-BEE, REVISED.

The Book for Beginners, the Most Complete Text-Book on the Subject in the English Language.

Bee-veils of Imported Material, Smokers, Sections, Etc.

Circular with advice to beginners, samples of foundation, etc., free. Send your address on a postal to 4tfdb

CHAS. DADANT & SON,
HAMILTON, HANCOCK CO., ILLINOIS.

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MUTH'S HONEY - EXTRACTOR,
SQUARE GLASS HONEY-JARS,
TIN BUCKETS, BEE-HIVES, HONEY-
SECTIONS, &c., &c.
PERFECTION COLD - BLAST SMOKERS.

Apply to **CHAS. F. MUTH & SON,**
Cincinnati, Ohio.

P. S.—Send 10-cent stamp for "Practical Hints to Bee-keepers."  Mention Gleanings. 1tfdb

TAKE NOTICE!

BEFORE placing your orders for SUPPLIES, write for prices on One-Piece Basswood Sections, Bee-Hives, Shipping-Crates, Frames, Foundation, Smokers, etc. PAGE, KEITH & SCHMIDT CO., 21-12db New London, Wis.

"HANDLING BEES." Price 8 Cts.

A chapter from "The Hive and Honey Bee, Revised," treating of taming and handling bees; just the thing for beginners. Circular, with advice to beginners, samples of foundation, etc., free. 5tfdb

CHAS. DADANT & SON,
Hamilton, Hancock Co., Illinois.

SECTIONS.

\$2.50 to \$3.50 per M. Bee-Hives and Fixtures cheap.

NOVELTY CO.,
Rock Falls, Illinois.

Please mention this paper.

GLEANINGS IN BEE CULTURE.



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FREE OUR CATALOGUE OR
SEED BOOK IS FREE ON
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Supplies for Farmers & Gardeners

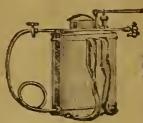
Our "Seed Book" is well arranged and
instructive to amateurs or professionals
who want present day common sense ideas.

IF YOU SOW & REAP USE OUR **TRUE BLUE SEEDS**

40 YEARS EXPERIENCE as growers has taught us how to produce Seed, famous
Tomato, Melon, Cucumber, Radish, etc., for 1891. Apply NOW for the **SEED BOOK**.

A. W. LIVINGSTON'S SONS, Box 273 Columbus, O.

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3-9 lb

SPRAY YOUR FRUIT TREES AND VINES

Wormy Fruit and Leaf Blight of Apples, Pears, Cherries,
Grape and Potato Rot. Plum Curculio prevented by using

EXCELSIOR SPRAYING OUTFITS.

PERFECT FRUIT ALWAYS SELLS AT GOOD PRICES. Catalogue showing
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We manufacture all kinds of bee-keepers' supplies and novelties, for wholesale and retail trade.

Best Goods at Lowest Prices.

Send for FREE illustrated catalogue for 1891.

THE BUCKEYE BEE SUPPLY CO.,
NEW CARLISLE, OHIO.

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Please mention this paper.

UTILITY BEE-HIVE.

Unexcelled for SIMPLICITY, CONVENIENCE, and CHEAPNESS. Every part perfectly

Interchangeable, Reversible, and Invertible, adapted to interchange with Simplicity, and other frames and bodies.

For introductory prices, circulars, etc., address

LOWRY JOHNSON,
MASON TOWN, FAYETTE & CO., PA.

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COLE'S GARDEN PLOW.

Descriptive circular with price and illustration of the best Garden Plow for the truck, patch or family garden, sent free on application to

G. W. COLE, CANTON, ILL.

In writing to advertisers please mention this paper.

READY TO MAIL YOU.

Our 1891 Illustrated Catalogue of Apiarist Supplies. Dovetailed Hive. Snow-white Sections, Golden-colored Italian Bees and Queens, etc. Every thing needed in an apiary we can furnish you. Address

JOHN NEBEL & SON, HIGH HILL, MO.

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A Four-Color Label for Only 75

Cts. Per Thousand.

Just think of it! we can furnish you a very neat four-color label, with your name and address, with the choice of having either "comb" or "extracted" before the word "honey," for only 75 cts. per thousand; 50 cts. per 500, or 30 cts. for 250, postpaid. The size of the label is 2 1/2 x 1 inch—just right to go round the neck of a bottle, to put on a section, or to adorn the front of a honey-tumbler. Send for our special label catalogue for samples of this and many other pretty designs in label work.

A. I. ROOT, Medina, Ohio.

READ WHAT THE

MICHIGAN AGRICULTURAL COLLEGE says of my **NEW SEEDLING POTATOES** in Bulletin No. 57, March, 1890. The prices, etc., I will add, and are my quotations. "**TIMPE'S NO. 1.**—Round, flat, red, yield 185 bush. per acre." This variety was also critically tested against **SCAB** in competition with "West's No. 1," and in only two instances, where chemicals were used, were they affected. Where untreated, **NO SCAB** was found. Stock to offer, 10 bushels, sold only by the pound. Price 75 cts., postpaid. The season was very unfavorable for extra early potatoes.

"**TIMPE'S NO. 2.**—Long, round; eyes few, small, shallow; color nearly white; flesh white, medium early; yield per acre, 340 bushels. A very handsome and **valuable** variety." Stock to offer, 15 bushels, sold only by the pound. Price 75 cts.

"**TIMPE'S NO. 4.**—Rather long, round; eyes few; very large; shallow; yellowish pink; flesh white, early. Yield per acre, 400 bushels. Quality good. A fine-looking potato, and by far the **most productive** of the **early** varieties. Leaves, medium green. Plants 16 to 18 in. high, with a spread of 3 to 3 1/2 feet. **Vigorous.**" Stock quite limited. Per lb., 65 cts.; 2 lbs., postpaid, \$1.00.

In conclusion the college then adds:

"**TIMPE'S SEEDLINGS** have been grown here for four years, and **HAVE SHOWN THEMSELVES** to be **VERY PROMISING** varieties, **WORTHY** of general **INTRODUCTION.**

Catalogue now ready. JACOB T. TIMPE,
Grand Ledge, Mich.

In writing to advertisers please mention this paper.

CHEAP ENOUGH.

Sections, \$3.00 per 1,000. Foundation, 45 cts. per pound; Chaff Hives, \$1.25 each; Simplicity hives, 90 cts. each; Dovetailed hives, 80 cts. each, and every thing needed in the apiary, cheap. Send for illustrated price list for 1891, free.

"**How I Produce Comb Honey,**" by mail, 5 cts. Third edition just out. Address

GEO. E. HILTON, Fremont, Mich.

In writing to advertisers please mention this paper.

BEE-KEEPERS

Send for my illustrated Catalogue of Bee-Keepers' Supplies. Prices reasonable.

F. W. LAMM,
Box 106, Somerville, Butler Co., O.

Please mention this paper.

BEE-KEEPERS' SUPPLIES.

GOOD AS THE BEST; CHEAP AS THE CHEAPEST.

Send for my new Price List of Hives, Sections, Foundation, Queens, etc., etc. We are prepared to fill your orders at once, and guarantee satisfaction. Will pay 23c cash, or 25c in trade, for fair average BEESWAX, delivered here.

3-8d

A. A. WEAVER, Warrensburg, Johnson Co., Mo.

SUPERIOR WORKMANSHIP

—AND—

LOW PRICES

are what have brought us our many thousand customers. We do not claim that our prices are below all others; there are some parties we can not compete with. They do too poor work; but, quality of goods and workmanship considered, our prices are "way down." We

"GUARANTEE PERFECT SATISFACTION."

We have built up our business on this guarantee, and shall continue to stand by it. If you have not received one of our 1891 Catalogues, send for one, and also for a sample copy of the AMERICAN BEE-KEEPER, a 20-page monthly magazine illustrated. Every bee-keeper should subscribe. Only 50c a year. Address

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Bee-Keepers' Supplies.

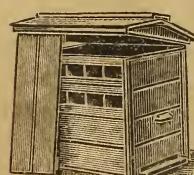
Hives, Honey-Cases, Sections, and Frames. We are the only concern in Southern California who make a

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